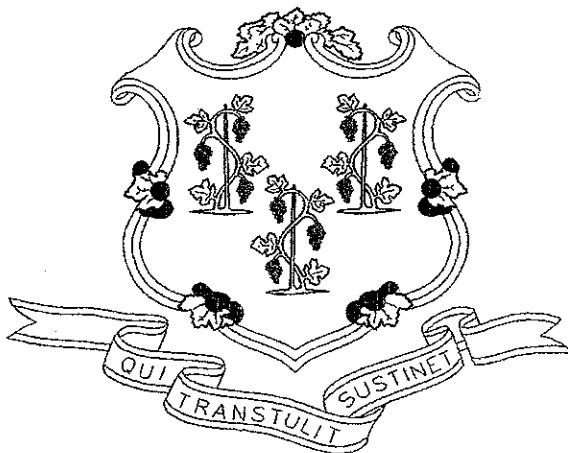


CONSULTANTS PROCEDURE MANUAL



Prepared by

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC WORKS**

Approved by:

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Date:

2/1/00

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC WORKS
CONSULTANT'S PROCEDURE MANUAL

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0.0 Introduction

The Department of Public Works is responsible for most new Building Construction and/or Capital Improvements within or to State Property and Buildings [other than "normal, routine maintenance"]. The Connecticut General Statute states the responsibility resides with the **Commissioner of Public Works** and/or his delegates.

Exceptions:

- [1] Any Capital Improvements to highway, bridge, mass transit, marine and/or aviation Facility;
- [2] Any informal or emergency Capital Improvements [see below] which the DPW Commissioner permits to be designed and administered directly by an Agency Facilities Management or Engineering Services Group;
- [3] Any "priority higher education" Capital Improvements;
- [4] Capital Improvements for the Connecticut Market Authority, the State Capitol and Legislative Office Buildings;
- [5] Certain Capital Improvements for the University of Connecticut and for portions of the Judicial Department.

This Consultant Manual is an information resource to any Consultant that does business with the State of Connecticut through the Department of Public Works. In this Manual some of the information includes, how to obtain state work, what consists of basic services and what consists of extra services for a consultant, administrative issues and technical requirements. The structure of DPW and how the various people interact with a project is also explained in this manual.

0.0 What is Public Works

The Department of Public Works (DPW) is responsible for the design and construction of nearly all major state facility capital projects. DPW also is responsible for leasing and property acquisitions for most state agencies as well as facility management, maintenance and security of state buildings in the greater Hartford area. In addition DPW has certain properties outside of the Hartford area, and surplus property statewide. The department is also mandated to assist state agencies and departments with long term facilities planning and the preparation of cost estimates for such plans.

As of June 30, 1998 the State owned an aggregate floor area of 50,083,197 gross square feet in approximately 3,600 buildings. This amount includes the several campuses of the University of Connecticut, the Connecticut State University System, and the Community-Technical Colleges.

As of June 30, 1998, the State of Connecticut leased a total of 2,537,360 gross square feet of space distributed through 231 executed leases.

The Department of Public Works covers Management and Planning, Facilities Management, Leasing Services and Facilities Design and Construction.

Under **Management and Planning** the DPW oversees Asset Planning, as a Statewide Service for the full range of State-owned property – all building and lands, but excluding highways, airports, etc. This effort relates to space management and space utilization, capitol spending, planning deferred maintenance, land & building inventory and some environmental records. The goal is to maximize the use of and value of these assets.

Under **Facilities Management** the DPW provides office space, utilities and building services for most state agencies located in Hartford. DPW also, operates district (regional) offices at several locations and the Governor's residence. DPW Facilities Management takes temporary custody and interim maintenance of the surplus properties being sold by the state.

Leasing Services has leasing responsibility for most State Agencies are funded by the DPW budget. Leasing supports land sales and purchases with legal & negotiation support if requested.

Under **Facilities Design and Construction** the DPW has responsibility for the majority of the State's building construction- both new and renovation. This includes statewide service for early planning and budgeting and design oversight for minor and major projects. Design, bid, build is the most common delivery system. Design build is used for some major projects. DPW is responsible for the Building Code compliance process for non threshold state construction projects. DPW has the primary state responsibility for hiring architects, engineers and construction contractors related to building and facility projects. DPW handles Energy Management as a Statewide Service, for all agencies and includes technical advice and oversight on energy projects and policy, in a joint effort with the Office of Policy and Management (OPM). This includes performance energy contracting, utilities joint savings project and Life Cycle Cost Analysis (LCCA) administration. DPW also provides Technical Resources, as a Statewide Service, for all state agencies related to buildings design and improvements; and the management of several statewide programs – such as all Underground tank replacements, ADA support, and Asbestos and Lead Removal.

DEPARTMENT OF PUBLIC WORKS MISSION STATEMENT:

To be the leader in providing quality facilities and in delivering cost-effective, responsive, and timely services to state agencies in the areas of planning, design, construction, facilities management, leasing and real property disposition. With our diverse, competent workforce, to partner with our customers and industry providers to make the best use of the State's resources.

DPW TEAMS

The Department of Public Works has been divided into four (4) teams that handle all Agency needs throughout the State. Each Team deals with the same Agencies on a continuous basis, to afford similarity of people and process that may be unique to that Agency.

The four (4) separate Teams are:

- The Education/Community College Team
- Connecticut State University Team
- The General Government Team
- Health and Human Services Team

The **Education/Community College Team** covers the Department of Education that consists of the Regional Vocation Technical School (RVTS) Campuses, the Community College System Campuses, and selected University of Connecticut projects.

The **Connecticut State University Team** covers the Department of Higher Education and the Connecticut State University System.

The **Health and Human Services Team** covers the Department of Environmental Protection (DEP), Department of Mental Retardation (DMR), Department of Mental Health and Addiction Services (DMHAS), Department of Social Services (DSS), and Department of Children and Families (DCF).

The **General Government Team** covers Department of Correction, Department of Transportation, Department of Administrative Services, Military, Agriculture, Department of Motor Vehicles, and any project that could carry multiple Agencies under the direction of the Department of Public Works.

Each Team has a number of individuals that have the necessary professional qualifications to comply with their Agencies requirements for their specific projects. If the manpower is not available on the specific Team, than a Team may use other Team personnel to fulfill the requirements. A Team consists of a Supervising Project Manager (SPM), some Project Managers (PM's), and some Assistant Project Managers (APM's). The teams also have their own secretarial help. The SPM's overview the Team to assure the Agencies needs and personnel issues are being met. The PM is directly responsible for the project, and is typically the main contact with the Agency and the Consultant on a day to day basis. The APM is the support staff that might have some professional expertise in construction, codes, mechanical, electrical, or other expertise, that can compliment the PM in overview of specific projects.

DPW SUPPORT:

The structure of the Department of Public Works also includes different support groups that include: hazardous materials (Asbestos, Lead), Construction, Architectural, Engineering, Risk Management, Affirmative Action, Property Disposal & Acquisition, Facilities Management, Underground tanks and Claim management. These groups lend support to the Teams and are called on when necessary for specific projects.

0.1 Terms and Definitions

Addendum: A document prepared by the Consultant that modifies the plans and/or specifications after a project is put out to bid but before the bids are received.

Agency: The (User) Agency of the State of Connecticut having administrative authority of the facility in which the Work is being performed.

Architect, Engineer or Consultant: An individual, partnership, firm, corporation or other business organization under contract with the Owner, commissioned to prepare Contract Drawings and specifications, to advise the Owner and in certain cases, to perform regular inspections during construction and when authorized to perform the duties of the Construction Administrator.

Attorney General's Office: A sub-unit of the Judicial Branch of Government of the State of Connecticut having statutory authority for reviewing and approving as to form, all contracts issued by the various State Agencies.

Base Bid: Monetary value stated in the Bid Proposal form as the sum for which the bidder offers to perform the Work described in the Bidding Documents, exclusive of adjustments for Supplemental Bids.

Bid or Bid Proposal Form: A complete and duly signed proposal to perform Work (or a designated portion thereof) for a stipulated sum submitted in accordance with the Bidding Documents.

Bond Commission: A sub-unit of the Executive Branch of Government of the State of Connecticut having statutory authority for reviewing and approving all requests for bonding of funds by all State Agencies. Currently the Bond Commission is constrained by both a fiscal year and a calendar year cap on spending.

Building Permit: A document issued by the Department of Public Safety's Office of the State Building Inspector permitting construction of buildings and/or structures that exceed certain thresholds defined in the Connecticut General Statutes.

Cash Allowance: An amount established in the Contract Documents for inclusion in the Contract Sum to cover the cost of prescribed items not specified in detail, and as shown in the Allowance Schedule.

Certificate of Acceptance: The Owner's written approval and acceptance of the Work issued to the Contractor upon written certification by the Design Professional of Final Completion.

Certificate of Completion: A document issued by the Owner to the Contractor stating that all Work has been completed and that the Work is accepted by the Owner.

Certificate of Compliance: A document issued to the Owner by the design professional stating that for the portion of the project completed, either the design portion or the construction portion, has been performed in substantial compliance with all applicable building codes

Certificate of Occupancy: Document issued by the authority having jurisdiction certifying that all or a designated portion of a building is approved for its designated use.

Certificate of Substantial Completion: A document prepared by the Architect and approved by the Owner on the basis of an inspection stating : 1.) that the Work, or a designated portion thereof, is determined to be Substantially Complete; 2.) the date of Substantial Completion; 3.) the responsibilities of the Owner and the Contractor for security maintenance, heat, utilities, damage to the Work and insurance; and 4.) the time within which the Contractor shall complete the remaining work .

Change Order: Written authorization signed by the Owner, authorizing a modification in the Work, an adjustment in the Contract Sum, or an adjustment in the Contract Time.

Commissioner: The State of Connecticut, Department of Public Works (DPW) Commissioner acting directly or through specifically authorized DPW personnel or agent(s) having authority to perform duties defined in Article 25.

Commission Letter or Amendment: A revision to a contract between a consultant and the state. Serves as an amendment to modify a fixed fee contract. Also used to extend the period of time stated in an on-call contract.

Construction administrator: An individual, partnership, firm, corporation or other business organization, under contract or employed by the Owner commissioned and/or authorized to oversee the fulfillment of all requirements of the Contract Documents. The authorized Construction Administrator may be a Department of Public Works employee, consultant, or any other designee as authorized and identified by DPW.

Contract Documents or Contract (construction phase): The Agreement between Owner and Contractor, Conditions of the Contract (General Conditions, Supplementary Conditions, General Requirements and other Conditions), Drawings, Specifications, and Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract, all of which shall constitute the Contract.

Contract (Consultant's): An agreement between a Consultant and the State for services. The agreement will describe the scope of services typically in an "exhibit A" and the contract will note fees, time frames, and deliverables involved.

Contract (on-call): A Contract between a Consultant and the State, that states a maximum fee amount, a duration of a specific number of years, and describes the types of services that the consultant may be asked to provide. However, the specific project, exact scope of work and corresponding fee will be identified subsequently in a series of "Task Letters".

Contractor or General Contractor: An individual, partnership, firm or corporation, under direct contract with the Department of Public Works, responsible for performing the Work under the Contract Documents. Whenever the words "Contractor" or "General Contractor" are used it shall be understood to mean Contractor.

Contract Start Date or Date of Commencement of the Work: 1.)The date the Consultant is to start work based on a written authorization to proceed. 2.)The date specified by the Owner in the Notice to Proceed on which the Contractor is required to start the work.

Contract Time: The period of time allotted in the Contract Documents for Substantial Completion of the Work, including authorized adjustments thereto. The days specified, calendar or working days, are stipulated in the Bidding Documents.

Day: Whenever the word Day is used it shall be understood to mean calendar day or working day as stated on the Bidding Documents, unless stated otherwise.

Department of Public Works Project Manager or Project Manager: The individual employed by the Owner, designated and authorized by the Commissioner, to be responsible for the overall management and oversight of the Project, and to represent the (User) Agency.

Equal(s): A replacement for the specified material, device, procedure, equipment, etc., which has been determined by the Architect and the Owner to be substantially identical to the first listed manufacturer or first listed procedure specified in terms of cost, quality and performance for the

Project. The Equal does not constitute a modification in the scope of Work, the Schedule or Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.

Final Completion: A written statement by the Architect to the Owner that the Work has been completed in accordance with the terms and conditions of the Contract Documents.

Final Inspection: Review of the Work by the Architect and Owner to determine whether Final Completion has been achieved.

Fixed Fee Contracts: A contract between a consultant and the state, stating a fixed fee for a specific scope of work related to a specific project.

Fixture, Furniture and Equipment (FF&E):

General Conditions: The General Conditions of the Contract for Construction, part of Division 0 of the Specifications.

General Requirements: That part of the Contract Documents entitled General Requirements, which is Division 1.

Liquidated Damages: A sum established in a Contract, usually as a fixed sum per day, as the predetermined measure of damages to be paid to the Owner due to the Contractor's failure to complete the Work within the Contract Time.

Lump Sum: An item or category priced as a whole rather than broken down into its elements.

Minor Changes in the Work: Changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents, which shall be affected by written order issued by the Architect.

Modification or Amendment: 1.) A written change to the Contract Documents. 2.) A Change Order. 3.) A Construction Change Directive. 4.) Supplemental Instructions for minor changes in the Work and/or additional instructions to the Work.

Notice to Proceed: Written notice, issued by the Commissioner or the Commissioner's authorized representative, to the Consultant authorizing the work to proceed and establishing the date for commencement of the contract time.

Owner or Department: The State of Connecticut, Department of Public Works acting through its Commissioner or specifically authorized Department personnel or agent.

Performance Specification: A description of the desired results or performance of a product, material, assembly, procedure, or a piece of equipment with criteria for identifying the standard.

Plans or Drawings: All drawings or reproductions of drawings pertaining to the construction of the Work contemplated and its appurtenances.

Project(as defined in State Statutes 4b-55): "Project" means any state program requiring consultant services if (1) the cost of such services is estimated to exceed fifty thousand dollars or, in the case of a constituent unit of the state system of higher education, the cost of such services is estimated to exceed three hundred thousand dollars, or (2) the construction costs in connection with such program are estimated to exceed five hundred thousand; or, in the case of a constituent unit of the state system of higher education, other than the University of Connecticut, the construction costs in connection with such program are estimated to exceed two million dollars.

Project Manual: The set of documents assembled for the Work which includes, but is not limited to, Contract Documents, Bidding Requirements, Sample Forms, Conditions of the Contract, General Requirements and the Specifications.

Proprietary or Sole Source Specification: A specification that describes a product, procedure, function, material, assembly, or piece of equipment by trade name and/or by naming the manufacturer(s) or manufacturer's procedure, exact model number, item, etc., of those products acceptable to the Owner.

Record Documents or As-built Drawings: Construction Drawings revised to show all significant Modifications made during the construction process.

Schedule: 1.) A Critical Path Method (CPM) or Construction Schedule as required by the Contract Documents which shall be a diagram, graph or other pictorial or written schedule showing all events expected to occur and operations to be performed and indicating the contract time, start dates, durations and finish dates and their relationship to Substantial Completion and Final Completion of the Work, rendered in a form permitting determination of the optimum sequence and duration of each operation. 2.) For smaller projects, a bar chart system will be sufficient for billing purposes. It is recommended that a CPM be developed although not essential. This CPM will enable the G.C./Architect-Engineer/DPW to have knowledge of Critical Path items when assessing issues such as change orders. It is strongly suggested that an initial CPM be developed and only modified if the Critical Path is affected during the construction process.

Shop drawings: Drawings provided to Architect and Owner by a Contractor that illustrate construction, materials, dimensions, installation, and other pertinent information for the incorporation of an element or item into the construction as detailed Contract Documents.

Specifications: The description, provisions and other requirements pertaining to the method and manner of performing the Work and/or to the quantities and quality of materials to be furnished under the Contract.

Square Feet - Gross (GSF): This data element represents the sum of all floor areas within the environmentally controlled envelope of a building. It includes the walls and vertical circulation space. The measurement is computed by measuring the area to the outside faces of permanent exterior walls of a building without any deductions. All enclosed floors of the building, including basements, garages, mechanical equipment floor, penthouses, and the like, are calculated. Does not include any covered unenclosed areas except in the case of a parking structure.

Square Feet – Net (NSF): This data element represents the sum of total square footage of the floor area within a building regardless of occupants or use. The measurement is computed by measuring the floor area enclosed between the inside face of the permanent exterior walls without any deductions.

Square Feet – Net Assignable (NASF): This data element represents the sum of total square footage within a building that is available for assignment to an occupant. Net Assignable Square Feet is measured from the inside faces of walls of a room or space.

State Properties Review Board: A regulatory agency that reviews and approves all leases and contracts prepared by the Department of Public Works in accordance with the Connecticut General Statutes.

Sub-consultant: A person, partnership, corporation or other business organization under direct contract with the Consultant.

Submittals: Documents including, but not limited to, studies, documents depicting the status of design at various phases, cost estimates, samples, manufacturer's data, or other such items submitted to the Owner by the Architect for the purpose of approval or other action, as required.

Substantial Completion: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

Substitution: A material, device, procedure, equipment, etc., which has been determined by the Architect and the Owner to be not an Equal to the first manufacturer or procedure listed in the Specification in terms of cost, quality and performance but which may be used in place of that item specified. . The Substitution constitutes a modification in the Work, the Schedule or the Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.

Supplemental Bid: The monetary value stated in the Bid to be added to the amount of the Base Bid if the corresponding Work, as described in the Bidding Documents, is accepted.

Supplementary Conditions: An extension of the General Conditions applicable to any and all portions of Work under the Contract Documents.

Task Letters: An agreement between a consultant and the state, that identifies the project, describes the scope of work to be performed by the consultant, states the fee agreed upon by the State and the consultant, and the time period for completion of the work and the deliverables.

Threshold Limit Building: Any proposed (new) structures or additions as defined by the Connecticut General Statutes.

Unit Price: The monetary value stated by the Owner or the Contractor, as a price per unit of measure for materials or services as described in the Contract Documents and/or Bidding Documents.

0.2 CONSULTANT SELECTION

A. PREAMBLE:

Legislative authority for most new Construction of and/or Capital Improvements [Work] within or to State Property and Buildings [other than "normal / routine maintenance"] resides with the Commissioner of Public Works [per C.G.S. 4b-1, 4b-23[I] and 4b-55 through 4b-59 inclusive] and/or his delegates. Under this authority, the Department of Public Works [DPW] is empowered to hire the Consultant Services of architects, engineers, landscape architects, land surveyors, accountants, interior designers, environmental professionals, construction administrators or any planner, construction manager or financial specialist. The following Consultant Selection Process has been developed over a considerable period of time to ensure fairness and equal opportunity to obtain Work with the State Department of Public Works.

0.2.1.1 Exceptions beyond the responsibility of the DPW:

1. Any highway, bridge, mass transit, marine and/or aviation Capital Improvements.
2. All informal agency [see below] or emergency capital improvements which the DPW Commissioner permits to be designed and administered directly by an Agency Facilities Management or Engineering Services Group.
3. Any "priority" higher education Capital Improvements.
4. Capital Improvements for the Connecticut Market Authority, the State Capitol and Legislative Office Buildings.
5. Certain Capital Improvements for the University of Connecticut and for portions of the Judicial Department.

B. LONG RANGE PLANNING:

Planning for and initiation of Capital Projects usually begins at the Executive Agency [DPW Client Agency] level. This Planning begins with both short and long term programmatic and operational needs, spanning a minimum time period of five [5] years, and is compiled by and up-dated biennially through reports to the Office of Policy and Management [OPM]. These Plans are incorporated into the OPM long-term, state capital improvements projection document: ***"Recommended Statewide Capital and Facilities Plan"***. Selected portions of this document are funded via the biennial State Budget and/or Special Legislation through ***"Operating and Capital Budget Requests"*** made through OPM. Emergency projects and other such exigencies are obviously not incorporated.

C. CAPITAL IMPROVEMENT / PROJECT INITIATION:

Specific Capital Projects are initiated by DPW Client Executive Agencies or Commissions via the completion and submission of an ***OPM B100 Form*** - to both the Office of Policy and Management and the Department of Public Works. The B100 Form defines such project issues as scope [space, equipment and programmatic needs] and goals, estimated costs, funding source[s] and timeframes for implementation.

The DPW is mandated to review and confirm the technical information provided within the B100 Form for completeness and accuracy and to provide any required additional technical advice and/or consultation services [through a specific DPW Client Agency Team]. After prioritizing the Work, the DPW Client Team expands the project database - in concert with its Client Agency - by completing the ***DPW B100 Supplement***.

D. PROJECT METHODOLOGY SELECTION:

At this point, the DPW Client Team Supervising Project Manager [SPM] and/or the Responsible Project Manager [PM] determines the ***appropriate method*** by which to contract for the services required.

As noted above, the DPW Commissioner [through the DPW Special Projects Unit] may allow a ***client agency to produce documents "in-house"*** or ***authorize the client agency to contract directly for certain informal and/or emergency projects.***

For smaller projects, the SPM may request that an informal selection be made from the **Informal Consultants Database** [see 0.2.8 below]; or, if the project demands immediate attention, the SPM may request that a **task assignment** be made from one of the **On-Call Contract Series** [see 0.2.9 below] - of the appropriate discipline[s]. The DPW may also elect to produce the necessary Work "in-house" with its own design staff and personnel.

In general, however, for **projects of larger scope** and/or with specific expertise, staffing and time requirements and/or constraints, the DPW Client Team - in concert with the Client Agency - usually determines to **formally contract for the requisite services** [see 0.2.6 & 0.2.7 below] with a private sector Consultant or Team of Consultants.

E. **CONSULTANT WORK WITH THE CONNECTICUT DEPARTMENT OF PUBLIC WORKS**

The State of Connecticut Department of Public Works contracts for Consultant Services primarily by one of the three [3] following methodologies - two [2] of which are required to be the result of formal advertisements in at least one newspaper with circulation throughout the State. The third method is via informal selections within the Department by individuals knowledgeable in the scope of the project for which a Consultant is being selected. These processes invariably use the **Design-Bid-Build** methodology. In addition, the DPW responds to some large, complex project needs via the competitive **Design-Build** methodology; or, in exigent circumstances evolving from Special Legislative Acts of the General Assembly, via **Specific Invitations to Interview - extended to pre-selected Firms**.

1) The **first** of the three [3] primary, most often used methodologies for obtaining Consultant Work with the DPW is via the **Formal Contract**:

1. These Contracts are normally for **large specific Projects**.
2. Construction Costs for these must normally exceed \$500,000 dollars for most state agencies; corollary consultant fees normally exceed \$50,000 dollars.
3. Construction Costs normally exceed \$2,000,000 dollars for constituent units of higher education; corollary consultant fees normally exceed \$300,000 dollars.
4. **These Contracts must be Formally Advertised** [Legal Notice/ Advertisement]:
 - a. **Formal Advertisements are always published on Wednesdays in the Legal Sections of several State Newspapers and of several Trade Publications:**
The Hartford Courant, the Hartford Inquirer, the Hartford News, the New London Day, the Connecticut Post, the Northeast Minority News et al; Brown's Letters, FW Dodge Reports, New England Construction News et al;
 - b. **Courtesy copies of Formal Advertisements are furnished to various Professional Organizations;**
Connecticut A.I.A., the Connecticut Coalition of Interior Designers, Connecticut Society of Professional Engineers, Connecticut Engineers in Private Practice, American Society of Landscape Architects et al;
 - c. Other Professional or Trade Organizations may be added to this circulation list via written request to the CSSP Chairman, 165 Capitol Ave, Hartford, CT].
5. **Advertised Formal Contracts have specific Submittal Requirements and specific Submittal Due Dates [usually 3 weeks after publication]; see example of Legal Advertisement Requirements below:**

STATE OF CONNECTICUT Department of Public Works

The State Department of Public Works has been authorized to retain Consultants / Firms to work on the Contracts/ Projects described below.

Consultants / Firms who wish to be considered for these Contracts/ Projects should indicate their interest in writing, via a separate Letter of Interest with appropriate back-up data (ie: one complete Submission) for each Contract/ Project. Each individual, Project/ Contract specific Submission shall be addressed to: Mr.

P.J. Delahunty, DPW Deputy Commissioner and Chairman of the Construction Services Selection Panel, Department of Public Works, Room 469 – State Office Building, 165 Capitol Avenue, Hartford, CT 06106, and shall be hand-delivered [by 4:00 P.M.] or postmarked on or before: Wednesday, January 01, 2000.

I. As a minimum, each Letter of Interest shall include the following [from the prime/lead Consultant]:
[A] The Contract/ Project Number and Title plus the Date of Completion of Design Services or other Work of the Consultant Firm's most recent Contract with DPW; [B] A Statement of any and all current Contracts with the Department (list and note the Status of each Contract/ Project, indicate whether Design Work has been completed and accepted); [C] Any Firm Name (other than the one appearing in the response) under which the Design Professional or other Consultant has prepared Services for the Department of Public Works - at any time within/over the past 5 years; [D] Firms shall, in every case, use their exact current Legal Name on all Letters and Forms in order to expedite the Contract Process.

II. In addition, prime/lead Consultants / Firms shall also provide the following back-up data:
[A] Corporations must submit a copy of their current Corporate Professional License [Certificate of Registration] issued by the Professional Licensing Board within the Connecticut Department of Consumer Protection; [B] Sole Proprietorships and Partnerships [all Partners] must submit proof of their current Connecticut Professional Licenses; [C] Non-Professional Firms shall provide appropriate credentials and documentation to establish their legal status in the State of Connecticut; [D] Out-of-State Lead Corporations shall include their current "Certificate of Legal Existence in the State of Connecticut" [Standard Form, obtained from the CT Office of the Secretary of State, located @ 30 Trinity Street, Hartford, CT, (860) 509-6000], as well as, their "Certificate of Good Standing" from their home state; [E] All Prime Consultants shall provide current copies of their Professional Errors and Omissions ["Claims Made"] Insurance. Non-Design Professional and Non-Professional Firms shall submit copies of appropriate Liability Insurance Coverage. Stipulate the Aggregate coverage of each policy and its minimum potential value [after subtracting all outstanding resolved or estimated unresolved Claims] and attach a historical "Claims Loss Summary" - for all Claims made against all such policies carried by your current or any prior Insurer[s] used by your Firm within the last five [5] years [including the current year to date]. Required Insurance Information, including the historical "Claims Loss" Summary, shall be provided directly from the respective Insurance Carrier[s]. Provide information regarding the type and extent of coverage which you propose to carry for each current Contract Submission. **NOTE:** The DPW may require that project specific Design Team Insurance [or Performance Bond for Non-Professional Firms] be provided – with values relative to estimated Construction Costs, Scopes of Work, Warrantee Periods and/or Fees- naming the State of Connecticut as beneficiary; [F] All Prime Consultants shall submit a composite Federal GSA Form 255 [including all Team members] carefully tailored to the specific project – for additional information see below.

III. [A] All Firms [prime or subordinate] certified and eligible to participate in the Connecticut Small Business Enterprise [SBE] Set-Aside Program in accordance with Section 32-9e of the Connecticut General Statutes should submit proof of their current status [current Certificate obtained through the CT Department of Administrative Services located @ 165 Capitol Avenue, Hartford, CT, (860) 713-5236]; [B] All Firms involved in the Submission [prime and subordinate] shall submit updated, current copies of their completed Federal GSA Form 254, "Architect-Engineer and Related Services Questionnaire" and Federal GSA Form 255 [tailored to the specific project or, for On-call Contract Submissions, to the claimed expertise].

NOTE: The GSA Forms are available from: Superintendent of Documents, U.S. Government Printing Office/GSA Publications @ (202) 512-1800 (Master Card or Visa Credit Cards accepted) P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954; or, may be downloaded [at no cost] from the U.S. Government Printing Office Internet WebSite: <http://www.gsa.gov/forms/zero.htm>
All Consultants are expected to complete these forms to the best of their ability; Contractors may supplement these with a current, up-dated A.I.A. Form #305 – "Contractor's Statement of Qualifications".

NOTE #1: No Consultant and/or Firm will be allowed more than two [2] Formal Contracts [in current, active design] at any one time. On-Call Contracts are Formal Contracts under which Task assignments are generally made informally [ie: smaller in scope and fee and so not advertised] and, therefore, are exempt from consideration as Formal Contracts in this context. Design-Build Projects are exempt from consideration as Formal Contracts in this context.

NOTE #2: Formal Contracts for Multidiscipline Projects: Submissions shall include an entire Team - including all such supplementary disciplines as are deemed necessary and appropriate for the specific Work. For these types of projects, the entire Team will be evaluated - both in developing a Shortlist and in making Final Selections. Sufficient information, including GSA 254 & tailored GSA 255 forms, professional registration and credentials and other pertinent information [as noted above] shall be provided for each Team Component.

NOTE #3: The DPW will accept requests for inclusion into its current Informal Consultants Database at any time. Letters of Interest [only - other supporting documentation not required at this time], requesting such inclusion, should be addressed to: Mr. P.J. Delahunty, DPW Chief Deputy Commissioner and Chairman of the Construction Services Selection Panel, Dept. of Public Works, 165 Capitol Ave., Rm 469, Hartford, CT 06106.

NOTE #4: On-Call Contracts shall generally be issued for a two [2] year term; but, will be generally be re-advertised annually; thus establishing overlapping series of contracts. Firms holding a current On-Call Contract in a specific discipline shall be ineligible to apply for the overlapping series of contracts in that discipline. In this way, the ability to satisfy the need for rapid responses to On-Call Tasks can be expanded to a larger number of firms - while assuring the DPW of continuous On-Call response availability. The DPW will utilize the oldest contract series whenever time and fee limits allow; however, if sufficient time and/or monies are not available to complete a Task without amending and/or extending an early series contract or if the required expertise is not available, the DPW may step up to the more recent contract series. On-Call fees will generally be limited to \$50,000.00 or less for most state agencies or \$200,000.00 or less for higher education [similar to the statutorily mandated limits for Informal Projects/ Contracts]. These services shall be utilized for facilities identified through requests by various state custodial agencies to the DPW. These contracts shall generally have an total upset limit of \$300,000.00 allocated for design fees.

6. The Notes above pertain as referenced within individual Projects/ Contracts.
7. All complete Submissions – those with complete, timely Submissions – are compiled into a **Long-list** for review by a **Short-list Committee** - usually comprised of four [4] qualified DPW [appointed by the Commissioner] people and one [1] Client Agency Representative.
 - a. Responsibility for making complete Submissions shall always remain with the Submitter - incomplete Submissions may be disqualified from consideration;
 - b. **Long-listed Firms are priority rated by each Shortlist Committee Member and numerically averaged** in order to arrive at a **Shortlist** to be Interviewed. This process normally takes approximately **three [3] weeks** from the Due Date for Submissions.
 - c. **Shortlisted Firms and Interview Panelists are notified within one [1] week.**
8. The five person **Interview Panel** is usually comprised of a CSSP Assistant Chairman, the DPW Bureau Chief, the responsible Project Manager and Agency Representative - supplemented by other interested persons or persons with special knowledge in the project/ contract under consideration.
9. Short-list Committees and Interview Panels make selections via **Quality Based Selection Procedures** – their prioritized scores are numerical averaged and used to recommend the Firms /Teams with the strongest credentials and most experienced personnel for the specific work to the Chairman of the Construction Services Selection Panel and to the Commissioner of Public Works respectively.
10. **Interviews** normally occur approximately **four [4] weeks** after Short-list Notification.
11. **Selected Firms/Teams are usually notified of their status within one [1] weeks of the Formal Interview**, Letters of Regret to unsuccessful Firms follow shortly thereafter;
12. Therefore the anticipated cumulative **time-span** from **Publication to Submittal Due Date** [3 weeks], from **Due Date to Short-list Results** [3 weeks], from **Short-list Results to Formal Interview** [5 weeks] and from **Interview to Final Notification** [1 week] is approximately twelve [12] weeks. **Letters of Regret** may lag by two [2] weeks.

2) **FORMAL, PROJECT SPECIFIC CONTRACTS:**

2.1) **THE ADVERTISEMENT STAGE:**

Once the decision is made to contract for the requisite services is via a **Formal Contract for Consultant Services**, the DPW is required to advertise for these in the form of a DPW Request for Proposals [RFP] / Request for Qualifications [RFQ] in at least one major newspaper [reaching all areas of the State].

The SPM or responsible PM presents a written request for the formal selection to the Administrator of Client Teams and copies the Chairman, Vice-Chairman and Assistant Chairmen of the **DPW Construction Services Selection Panel [CSSP]** via a Memorandum – preferably with the B-100 Form, the B-100 Supplement Forms and any other pertinent contract/ project data [regarding Pre-Design, Master Planning, Environmental and Geo-Technical Information, Work Scope, Artwork and Equipment Needs, Funding, Contingencies and Fees, Time Constraints, Goals and Expectations et al] attached.

NOTE: Although the State Building Official must issue a Certificate of Occupancy for completed Work and the State Fire Marshall's Office is normally kept apprised, the DPW remains the responsible party for reviewing and approving Work for Building and Fire Safety Code Compliance - within State Buildings and on State Sites –which falls below the **"Threshold Limit"** [CGS Section 29- 276] and **Declaratory Rulings of the Architectural Licensing Board**. The Connecticut Department of Public Safety is statutorily responsible for ensuring this Compliance in State Buildings and Sites above the "Threshold Limit" or with regard to any Exceptions or Modifications requested to the State Building and Fire/ Life Safety Codes. Having received this correspondence, the DPW Construction Services Selection Panel normally adheres to the following practices and procedures in Advertising for Consultant Services:

1. In the interest of cost efficiency, the CSSP usually advertises when it has received two or more requests or within **three [3] weeks** of receipt of the complete package.
2. An Assistant CSSP Chairman writes the Advertisement, reviews it with the responsible Team PM and attaches the currently approved **Submission Requirements** Information [see 0.2.6.5 above] – which reflect the necessary format for all responses to the DPW Request for Proposals [RFP] / Request for Qualifications [RFQ].
3. The Advertisement is submitted for review by the CSSP Chairman and Vice-Chairman and is then transmitted to the DPW Commissioner for his signature/ approval.
4. The CSSP secretary next prepares a Purchase Order - indicating the particular state newspapers to carry the Advertisement, the current contracts included and the required date of publication.
5. As a courtesy, the Construction Services Selection Panel transmits copies of the approved Advertisement to various Professional and Trade Organizations and Journals.

Formal Contracts and their corollary selection and approval requirements require elongated pre-design project schedules – adding approximately **twelve [12] to fifteen [15] weeks** for Advertising, Short-listing, Interviewing and Selection - prior to the commencement of contract negotiations. For further details see **"Obtaining Work with the Department of Public Works/ State of Connecticut"** below.

2.2) **THE SCHEDULING PHASE:**

After Advertising, the CSSP charts a **Preliminary Schedule** for all phases of each Contract and identifies the involved personnel [senior management, client agency representatives and selected, qualified members of the Construction Services Selection Panel] - from the initial request date through the legal receipt of Submissions, long-listing, short-listing, interview and post-selection activities. This "early notification" is circulated to all interested state personnel in an effort to communicate basic information and resolve any scheduling conflicts.

2.3) THE SHORT-LISTING PHASE:

Four [4] members of a **Short-listing Committee** are selected, then approved by the CSSP senior management, from among the list of CSSP Members selected to serve annually by the DPW Commissioner. At least one [1] member of the Committee is a Client Agency Representative.

1. A **Long-list of Firms and/or Teams** is created from all those Firms/ Teams which have submitted all of the required materials within the allotted time frame.
2. A **Criteria for Selection**, tailored to the specific project, is produced to clarify the important **statutory and project issues** and is provided to the Short-list Committee.
3. Each of the five [5] Short-list Committee Members are formally notified and requested to select between six [6] and eight [8] Firms or Teams [in priority order].
4. Also accompanying the **Notice** is the developed Criteria for Selection, a **Ballot Form** and **Short-list Ballot Due Date**. The Short-list Committee is also requested to attend a discussion of the **Consultant Performance Ratings of Long-listed Firms** and a **Questionnaire Development Session** - after reviewing the Submissions and prior to balloting.
5. **Prioritized Ballots** are mathematically summarized on a **Short-list Ballot Summary Form** to produce a **Short-list** of approximately five [5] Firms for a single Contract; or, at least two [2] more Firms than available Contracts [in the case of multiple On-Call Contracts].
6. **Short-listed Firms** are informed immediately via a **Letter of Notification**. Attachments consist of the previously developed **Questionnaire**, an **Alphabetical Listing** of all competing Short-listed Firms and a **Map** with directions to the Interview Location.
7. Simultaneously, the **DPW Interview Panel** is provided **Final Notification** of the **Interview Date**, the day's **Schedule of Short-listed Firms** [interviews for complex contracts/ projects normally run between 35 and 45 minutes with a 10 or 15 minute break between Interviews] and copies of the **Selection Criteria** and **Questionnaire**.
8. **Letters of Regret** are always sent to all Firms/ Teams not Short-listed.

2.4) THE INTERVIEWS PHASE:

Four [4] members of the **Interview Panel** are selected, then approved by the CSSP senior management, from among the list of CSSP Members selected to serve annually by the DPW Commissioner. At least one [1] member of the Committee is a Client Agency Representative. Some personnel variation is enforced between the Short-list Committee and the Interview Panel and all Panelists are required to attend all Interviews to ensure propriety. All Panelists are required to study the Firm/Team Brochures. The **Interview Panel Chairman** [CSSP Assistant Chairman] brings the following materials to the **Interviews** and adheres to the following procedures:

1. A Manila envelopes for each Interview Panelist containing a **Final Selection Ballot** with all firms listed in order of interview;
2. An additional envelope containing: [a] a separate **sign-in sheet for each interview** for each Panelist and each member of the Firm/ Team being Interviewed; [b] a **Panel Identification Sheet** to inform the Interview Firm/ Team of who is sitting across the table – for post-interview feedback; and [c] a **Final Selection Ballot Summary Form**;
3. Prior to the first interview, the **Interview Panel** convenes to discuss the contract/ project and their expectations; every Panelist is required to sit through every interview;
4. After the last interview, the **Interview Panel** discusses the various presentations - in order to clarify any issues or underscore any salient assertions. Panelists do not indicate their choices in these post-interview presentation critiques.
5. Panelists complete their Individual Ballots, re-insert them into their manila envelope and pass these to the Panel Chairman, who completes the **Final Selection Ballot Summary Form**, and forwards the results to the **DPW Commissioner** through the **DPW Chairman and Vice-Chairman of the State Construction Services Selection Panel** for Final Selection Approval.

2.5) THE POST-INTERVIEWS PHASE:

1. With the Commissioner's statutorily required signature, the **Post-Interview Phase** begins

- during which copies of the **Selection Memorandum** is distributed to involved DPW Individuals, Senior Management and involved Client Agency Personnel;
- 2. **Selected Firm[s]** are officially notified by the CSSP Chairman and provided with the name and phone number of their **DPW contact person/ liaison** with whom they can begin contract negotiations.
- 3. If a project scope and fee can be agreed upon, a contract is prepared and executed.
- 4. If agreement cannot be reached, the Commissioner can select another Firm on the priority list presented to him by the Interview Panel.
- 5. **Letters of Regret** are always sent to all Firms/ Teams not Selected.

F. The **second** of the three [3] primary, most often used methodologies for obtaining Consultant Work with the DPW is via the **Informal Contract**:

1. These Contracts are normally small, Project specific and represent **the inverse constraints vis-à-vis Formal Contracts** regarding Fees and Construction Costs:
 - a. Construction Costs must not exceed \$500,000 dollars for most State Agencies; Corollary Consultant Fees cannot exceed \$50,000 dollars;
 - b. Construction Costs must not exceed \$2,000,000 dollars for Higher Education; Corollary Consultant Fees cannot exceed \$300,000 dollars.
2. These Contracts are never Formally Advertised.
3. This database is continually being developed. Any Consultant may request inclusion in this database at any time – per the instructions of Note #3 of the Formal Advertisement Included above
4. It will be updated annually via Information provided by the Department of Consumer Protection; and, at the end a four [4] year cycle – via a mailing to Firms listed in the database. Firms, which fail to respond in a timely fashion, may be deleted.
5. For immediate inclusion, Consultants may submit appropriate licenses and certifications, insurance information as required by the formal advertisement [above], GSA Forms 254 & 255 and in alphabetical, tabular form, a list of their areas of expertise, as well as, the percentage of their work effort that is attributed to each of these referenced areas.
6. Consultants should tailor their updated GSA 254 & 255 Forms to best represent their Key Personnel and claimed Areas of Expertise; and, in general, comply with the Submission Requirements noted in the typical DPW Advertisement above.
7. Consultants are selected in priority order by qualified personnel within the DPW, in consultation with the respective Client Agency, from the “Areas of Expertise” declared by the respective Firms and listed in the DPW CSSP **“Informal Consultants Database”** and from other supporting documentation supplied [including the GSA 254 & 255 forms].
8. After the several qualified DPW Personnel, picked to make the selection, have reviewed the GSA Forms and other pertinent information provided by Database Firms with the appropriate credentials, the Informally Selected Firm shall be chosen via **“Quality Based Selection Procedures”** – ie: shall have the highest mathematical score averaged among the qualified selectors. Geographic proximity may become a selection factor. The DPW Commissioner must approve all recommended selections.
9. State Property Review Board approval is not required for most Informal Contracts.
10. After a Contract has been successfully negotiated between the selected Database Firm and the responsible Client Agency Team Member; however, it must be submitted to the Office of the State Attorney General for approval
11. Since this process is virtually identical for both large Formal and small Informal contracts, it tends to elongate the timeline for accomplishing the smaller projects, rendering the Informal Contract/ Project proportionately less efficient than Formal Projects.

- G. In an effort to overcome this innate inefficiency and accomplish the many small projects more expeditiously, induced the Department of Public Works to develop its **third** primary method of contracting for Consultant Services - **On-Call Contracts [various disciplines]**:

1. These Contracts are indefinite quantity/scope contracts, developed to expeditiously accomplish a variety of small projects [identified - when scoped - as "**Tasks**" and **often** similar in fee and construction cost limitations to Informal Projects];
 - a. Construction Costs must not usually exceed \$500,000 dollars for most State Agencies; Corollary Consultant Fees cannot exceed \$50,000 dollars;
 - b. Construction Costs must not exceed \$2,000,000 dollars for Higher Education; Corollary Consultant Fees cannot exceed \$300,000 dollars;
2. These **Base Contracts** are Formally Advertised [see Note #4 in the Legal Advertisement Requirements shown above]; and, once negotiated, are approved by the **DPW Commissioner**, the **SPRB** and the **State Attorney General**;
3. The actual Base Contract conveys no real Fee to the Selected Firm or Firms – the Base Contract is a legal mechanism through which the DPW can quickly hire the Consultant via a simple "**Task Letter**";
 - a. A Task Letter defines a mutually agreed upon Scope of Work and Fee;
 - b. A Task Letter does not require the approval of the State Attorney General;
4. **Task assignments**; however, are made informally on a rotating basis- unless a particular expertise is required – by either the Chief Architect or Chief Engineer;
5. **Task Assignments** can occasionally approximate Formal Projects in order to accommodate exigent circumstances; **scope and fee exceptions** can be utilized to accomplish large emergency projects;

H. **THE STATE PROPERTIES REVIEW BOARD:**

1. The **State Properties Review Board** closely monitors most State DPW Contracts; utilizing the criteria noted below:
 - a. SPRB approval is required for most State Agencies - whenever actual or estimated total Fees exceed \$50,000 dollars; whenever any particular Consultant's Fee exceeds \$20,000 or whenever actual or estimated Construction Costs exceed \$500,000.
 - b. SPRB approval is required for projects for the constituent units of higher education: whenever actual or estimated Fees exceed \$300,000 dollars; whenever any particular Consultant's Fee exceeds \$20,000 or whenever actual or estimated Construction Costs exceeds \$2,000,000 dollars.

0.2.1 **Forms 254/255**

- A. These are the forms that the DPW has accepted for submission during the shortlisting process. These forms are utilized by most of the Federal Agencies and can be obtained from our office or any of the Federal Agencies utilizing professional qualifications. To contact DPW call the Commissioner's Office and ask for the Consultant Selection Committee Office for further instructions.

0.2.2 **Consultant Error and Omissions Claim History**

- A. As one of the essential reviews by DPW, we are asking all interested parties requesting consideration for consultant selection to submit a Claims History Record from their Liability Insurance carrier for the past 5 year period. This information will be utilized as part of our selection review.

0.2.3 SUB-CONSULTANTS TO THE ARCHITECT/ENGINEER

- **Formal Selection**
- **Informal or Task Selection**
- **Special Negotiated Services**
- **Special Bid Services**

a. **FORMAL SELECTION**

The Architect/Engineer (A/E), or other prime consultants that response to a Department of Public Works (DPW) Request for Proposal (RFP) shall, as part of the evaluation and selection process, identify the associated sub-consultants that will be part of the design team. Evaluation of the design consultants will be based on the combined qualifications and experience of both the prime consultants and supporting sub-consultants that form the complete team offering to provide the services. Sub-consultants may be artists, landscape architects, architect, civil/structural/mechanical/electrical /acoustical engineers, interior designers, technical experts or other specialists that will provide supplementary services to support the prime project consultant.

If special consultants are required for acoustical, food service equipment, security, etc. the same procedures for sub-consultants mentioned above shall be followed. The Sub-consultant fee shall be included in the prime consultant's total fee for service submittal to DPW.

b. **INFORMAL OR TASK SELECTION**

Standard Sub-Consultants: The A/E shall submit the names of sub-consultants for the project. If the informal selection is an "on-call" infrastructure contract the A/E will submit a list of sub-consultants to the DPW-Project Manager before any negotiations for design services is undertaken. The prime consultant will be required to provide DPW with the names of all the sub-consultants. DPW will then review of the names prior to any submission. Sub-consultant is required to be registered to practice in the State of Connecticut.

If special consultants are required for acoustical, food service equipment, security etc., the same procedures for sub-consultants mentioned above shall be followed. The sub-consultant fee shall be included in the prime consultant's total fee for service submittal to DPW.

c. **SPECIAL NEGOTIATED SERVICES**

Field Survey, Soil Scientist and Geo-technical:

Services of a Field Survey, Soil Scientist and/or Geo-technical associated with the design shall be part of the prime consultant's services. The Soil Scientist must have a minimum of three years professional experience in soil science and be certified by the State of Connecticut. The Geo-technical engineer shall be licensed by the State of Connecticut and have the appropriate education, training and experience in subsurface investigation and geological data analysis.

DPW and the prime consultant, i.e., architect and/or engineer will negotiate an agreement for a contract base on the scope of services and fees for services. The prime consultant will be responsible for the work performed by the sub-consultant.

Sub-Consultants Cont.

If the A/E design consultant have qualified "in-house" staff to perform the additional services, the A/E design consultant may perform those services, but shall not be entitled to an additional or "markup" fee on the additional services.

Services provided by Field Survey, Soil Scientist and/or Geo-technical sub-consultants are regarded as special design services to be compensated in addition to the basic A/E fee for service.

Field Survey services for a separate or stand-alone projects (not directly related to a design project) will be selected from the DPW "on-call" list of consultants. The DPW-Project Manager shall initiate a written request for the name of a firm to provide the required field survey services.

d. SPECIAL BID SERVICES

Site Subsurface Borings

The prime consultant (A/E) or their geo-technical sub-consultant shall prepare a Request for Proposal (RFP) to solicit three or more bids. If the geo-technical sub-consultant has the capability to perform the subsurface drilling/boring operations, the sub-consultant may also submit a sealed bid in addition to the three or more requested sealed bids.

The bids shall be submitted to the DPW-Project Manager for evaluation. When the review and subsequent recommendation is complete, the DPW-Team Member shall prepare a commission/task letter and obtain DPW approvals for the subsurface drilling/boring services.

0.3 CONSULTANT SERVICES

0.3.1 BASIC SERVICES

The consultant services provided to the State of Connecticut will be considered Basic Service as defined by the specific contract prepared for their project. Additional Services will be specifically listed within the contract. All phases and services listed within the text of the contract are to be delivered upon the implementation of a contract, task letter or commission letter. If a phase, specific duty or normal service are to be excluded, these shall be so noted within the text.

It is the responsibility and duty of each consultant to make sure that any part of the contract they consider additional work or services is delineated as such. If a project is advertised for a specific expertise and that expertise is included as part of the Team before a selection Committee; that service is now included as a basic service. An example of this situation:

The State, in its advertisement for work, identifies the need to expand a dining function for an Agency. Included in its scope of work includes the need to expand the kitchen. Part of the design team is a kitchen consultant as a primary team player, this consultant is now part of the Basic Service of this contract and not an additional service.

Typical basic services are those activities that are normally delivered by a design professional within the generally accepted phases of a design process. Schematic Design, Design Development, Contract Documentation, Bidding and Construction Administration are considered those typical basic phases.

0.3.2 ADDITIONAL SERVICES

The DPW is willing to take an active position regarding additional compensation for work which is clearly beyond the bounds of our maximum fee contracts. It must be clearly understood by the design professionals that a case of need be demonstrated for the work (project). It should be due to DPW or the Agency changes that are being proposed which require additional work. In other words, if the work has been incorporated in the Basic Services it is not considered Additional work. Secondly, it is incumbent that the design professional address the need and effort required to meet these needs prior to undertaking any of this work. These risks are solely on the party that enters into any work without prior acknowledgment by the State. Any additional fees will be confirmed by the Team and by SPRB before acceptance.

0.3.2.1 PRE-DESIGN STUDIES

This phase of the project is undertaken to develop a program or expand on an idea that has not been developed enough to enable either the Agency or DPW to define a project or budget for Bonding. This phase precedes the normal schematic design phase which is included in Basic Services of our design contracts.

The pre-design study may require many detailed interviews to determine the real functions to be accommodated; adjacencies (bubble diagrams), determining space requirements to accommodate function and staff, security requirements, blocking and stacking, models, etc.

The normal schematic phase includes, and is not to be considered a basis for pre-design, items such as: review of existing as-built design, review of existing conditions as they relate to as-built drawings; the development or required adjacencies and required square footage to meet normal design requirements.

0.3.2.2 CREATION OF AS-BUILT DRAWINGS(Record Drawings) WHEN NONE EXIST

Inherent in each building design with DPW, is the inclusion of As-built drawings as part of the design exercise. This would be the last aspect of the design contract and after construction is completed. In those cases, where an existing building has sufficiently inaccurate drawing information or none at all to utilize for the future design assignments, the A/E has to provide added services to provide the missing documents. This service might be a stand-alone project or an adjunct to an anticipated project. In either case, it is considered additional scope.

In addition to a Mylar reproducible document, this work will be also be provided in electronic format as required within our Consultant's manual.

0.3.2.3 INTERIOR DESIGN/SPACE PLANNING & SYSTEM LAYOUTS

Within the Basic Services of the Designer's Contract is an aspect of interior design which are part of the built-in areas of the base design. Included in basic services are: Millwork detailing, color selection of room finishes, and may also include window treatment and fabric selection if included in the original scope of the project. Additionally, as part of preliminary design, it is expected that the designer will produce a layout of furniture/work stations including a summary of utility needs to demonstrate that the design is functional and meets the program scope.

Any other work including final work station or furniture layout, listing of equipment, specifications for movable items, coordination of color and materials for out of contract items and any other work required for the movement, design or coordination of movable equipment and furnishings as well as utilities to be provided at the point of use, i.e. a moveable office cubical, shall be considered out of scope additional work.

0.3.2.4 EQUIPMENT LIST AND SPECIFICATIONS

This is covered in the above explanation, again any work required to be performed on movable equipment which is outside the A/E contract should be included as additional work. The exception is, unless the service is included in your basic service and in the scope of work. Examples of movable equipment are: Waste baskets, desks, seating (not built-in), photo copy equipment, panel systems, computers, etc.

Examples of non-movable equipment are: hard-wired or hard-piped devices, fixed auditorium seating, scientific workstations, packaged kitchenette units, etc.

0.3.2.5 ADDITIONAL COORDINATION WITH A CM FIRM

Basic A/E services anticipate particular duties and skills will be provided as defined in the DPW contract. The use of a CM firm may require that the basic A/E service be expanded and may be construed to be additional work. It is the responsibility of the design

professional to identify these areas of additional service, quantify them and describe how and why they should not be considered basic service.

DPW has observed that added effort has appeared in areas when duplicate efforts were being performed by the A/E such as: added team meetings, requirements for preparation of added presentation packages, schedules, bid analysis, pre-bid conferences, etc.

0.3.2.6 SEPARATE BID PACKAGES/DOCUMENTS FOR SEQUENTIAL CONSTRUCTION

In addition to the services above, actual duplicate work is involved in the preparation of separate bid packages. New titles on each sheet, new reference standards per package, new supplementary general conditions, different format of pages for specifications and drawings, are a few of the items during the design; plus the cost of duplicating the sheets for reproduction are efforts to be identified.

Whereas in phased construction, due to multiple bid packages, there are duplicate meetings, pre-bid conferences, overlapping and extended reviews of shop drawings, payment requests, clarification drawings and correspondence that would have been consolidated under one contract, we recognize these as potential for additional work. It will be the A/E's responsibility to determine the additional effort and fee required. **NOTE:** Start-up meetings and specific meetings regarding one of a kind items should be considered as basic service and not a basis for consideration of additional service.

0.3.2.7 WORK DUE TO EXTENDED DESIGN/CONSTRUCTION SCHEDULE (NOT THE FAULT OF THE A/E)

The contract language and intent in the Design Professional Contracts, is clear but does not contain specific time limit. If DPW or the Agency cannot adhere to a pre-arranged schedule, and we cause additional expenditures or action requiring additional work by the A/E, we owe them the opportunity to negotiate additional fee to offset the delay/additional work. The time extension examples may have been caused by delay in funding, significant change of scope or poor contractor performance.

The DPW contract states that the A/E may be due additional fee if the actual construction time exceeds the Construction Contract Time by more than 25%, in every case, the A/E must justify by request for additional fees on the basis of extra work performed. The fact that as-built drawings were produced beyond the 125% date does not justify additional fees because the work to produce the as-built drawings was included in the basic services. Added fees may be justified for job meeting beyond the 125% contract time and then on a man-hour basis, not a prorated time basis. The billing will be based on actual hours billable up to a "Not-to-Exceed" estimate of cost. If an A/E error caused the time extension, the A/E will not be paid for added fee associated with that time extension.

0.3.2.8 FACILITY MANAGEMENT

A new area of A/E involvement which has been featured in many of the software packages which is offered as part of adjunct to CAD systems, is Facilities Management. DPW recognizes that any service or system developed that can monitor, quantify area or surfaces; might be the by-product of the software, but is not a basic service that we are including in our A/E contracts. If this or any tangential service, (such as work order development or periodic reminder of service visitation, etc.) is desired or required by an Agency; it may be considered an additional service.

0.3.2.9 ENVIRONMENTAL IMPACT INFORMATION OR PUBLIC HEARING

In general, DPW pays for any extensive A/E involvement in environmental activity relative to DPW projects. If a design professional is involved in a project that requires extensive participation in the environmental process and additional effort is required by them to support or provide information that is not available; such as attend additional meetings, then DPW may approve this additional work with prior notification. It is the A/E's responsibility to provide at no cost, information on siting, building layout, floor plate orientation, provide copies of rendering/elevations, reading the document and attending 3 detailed environmental document review meetings, and implementation of the requirements of the Environmental Assessment or Environmental Impact Statement.

0.3.2.10 THIRD PARTY (PEER) REVIEW - THRESHOLD PROJECTS

Any engineering firm being retained for the purpose of performing a structural peer review will have a fee negotiated for these services. If the Architect has a project which will require having the structural design examined by an independent third party reviewer, then DPW may approve this additional work (with prior notification) upon the request of the consultant only if the added work is not a result of poor initial design.

0.3.2.11 STRUCTURAL (SEISMIC) DESIGN

The building code now requires an analysis and design for seismic forces. This provision was added with the adoption of BOCA 1987 Building Code on October 1989. The seismic design loads must be evaluated in addition to the wind loading design. DPW does NOT consider this code requirement to be a change in scope. HOWEVER, when designing a structure that is an addition to an existing building or which connects to an existing building - the resultant analysis of the older structure and/or the design of the connection will be considered and may be the basis for additional compensation.

0.3.2.12 ENERGY-LIFE CYCLE COST ANALYSIS

The building envelope and the mechanical and electrical systems must comply with ASHRE 90.1 and the design engineer must perform a life cycle cost analysis as required by the contract in compliance with the A/E Manual and will be reviewed by DPW and OPM. Code compliance and a life cycle cost analysis have always been a part of the mechanical systems design process. DPW does not consider these requirements to be a change in scope.

0.3.2.13 ENERGY CONSCIOUS CONSTRUCTION - ENERGY BLUEPRINT

Work required to model or design alternative systems including impact on other systems must be clearly defined to enable the DPW to determine what is beyond basic good design verses additional effort to justify a particular system. The simple fact that the engineer is participating in the utility program's of energy conscious construction or blueprint, as part of good energy design; does not (automatically) normally qualify as additional service.

0.3.2.14 TELECOMMUNICATION/DATA DESIGN

Work involved beyond the basic location of primary feed, general system distribution, conduit systems, furniture systems interaction and terminus locations may be considered additional service unless it has been described as basic service on which the design fee is based. Systems below 100 phones shall be considered as Basic Service.

0.3.2.15 FULL TIME FIELD PERSONNEL

When requested, DPW will consider this activity as additional service. This will be beyond any work considered as basic to CA services as defined within the Design Contract and should not duplicate any service already included in the basic fee structure. The A/E will have to indicate how the Basic Services are not being duplicated. The initial fee, for this work, will be based on a lump sum contract with additional work to be based on actual man/hour costs beyond that which has will be contracted.

0.3.2.16 SPECIAL INSPECTIONS

Special Inspections are required for every building basic services require a clearly defined list of those inspections. DPW will obtain these inspection services, if the consultant is asked to provide them or other duties beyond the defining, at that time DPW will consider discussion for additional work.

0.3.2.17 SBI/SFM FIELD CONSTRUCTION CHANGES

Over the past few years, DPW has had to require extra effort by the Design professional during construction, as a result of field inspections by the SBI/SFM personnel. Based on these experiences, DPW will **not** normally accept an additional work claim by the involved parties, except when the (effort) additional work and man/hour costs can be clearly defined.

0.3.2.18 DESIGN CHANGES DURING CONSTRUCTION

When additional effort is required to fulfill the design needs to complete the request as defined above, DPW will consider additional fee based on an up-front negotiation for the design service. This must be submitted to the Project Team prior to performing the extra service.

1.1 Contract Process

Standard contracts have been developed by D.P.W. in conjunction with the Office of the Attorney General.

- 1.1.1 Once the consultant has been selected, and the fee and scope of work negotiated, the Project Manager (together with the Contracts Administration Unit) will draft the contract, task letter or commission letter as the case may be.
- 1.1.2 For documents with fees in excess of those limits set forth in Connecticut General Statutes Section 4b-55, approval of the State Properties Review Board (S.P.R.B.) is required. The time period for said approval is approximately 15 days from the date of submission, however, the Connecticut Statutes allow 30 days for S.P.R.B. action.
- 1.1.3 The funding process is subject to bonding allocation by the Bond Commission and the time to accomplish this is variable. Following confirmation of the availability of funds, the document is forwarded to the consultant for execution. A transmittal letter accompanies contracts to be signed and provides detailed instructions for the consultant. It is important that the consultant comply with the requests for supplemental documentation (e.g., insurance, current license, certificate of authority) in order to avoid delay in completing the processing of the document.
- 1.1.4 In the case of contracts, approval of the Office of the Attorney General is then obtained. The time for said approval is approximately 21 days.
- 1.1.5 Change of Legal Entity or Name Change After Execution of the Contract

The consultant is obligated to provide prior written notice of any intent on its part to: 1) change its name, 2) change the type of legal entity used to conduct its business, 3) merge into another legal entity or 4) be acquired by another legal entity. The entity that results from any of these actions is hereafter referred to as the "new entity".

Once the name change, change in legal entity, merger or acquisition has occurred, the new entity must promptly enter into a contract amendment with the State reflecting that the new entity is being substituted for the original signatory to the contract and that the new entity has assumed all obligations under the contract. In connection with the contract amendment, the consultant must provide the following documentation: 1) any professional license issued to the new entity; 2) a certificate of insurance in the name of the new entity; 3) a certificate of authority authorizing the officer or partner signing for the new entity to execute the agreement; 4) if the new entity is an out-of-state corporation, a certificate of authority to transact business in Connecticut and a certificate of good standing from the entity's state of incorporation.

Notwithstanding the above, the State shall continue to enjoy all of its rights to terminate the contract as stated in the contract. The State has no obligation to execute a contract amendment with the new entity.

1.2.1 Consultant Seal Data Form

The information requested below is required for the processing of your contract. It is important that this information be **EXACTLY CORRECT**, or else significant delays may result! See Appendix "C" for a blank form to be used.

Name of Firm: _____
(This name must be your exact legal entity, and should match your corporate seal or A/E seal except d/b/a firms)

Mailing Address of Firm: _____
Project Number: _____
Project Title: _____

Sample of Corporate Seal, or if **not** a corporation, sample of A/E Seal (affix raised Seal below):

Type of Business (check one):

_____ Corporation

_____ Partnership

_____ Sole Proprietor

_____ Doing Business As (d/b/a): _____

Exact Wording on Corporate Seal:

State of CT corporate registration # (or, if **not** a corporation, State of CT A/E license # of individual signing contract): _____

License Expiration Date: __/__/__

Tape a copy
of your A/E license
here.

INTERIOR DESIGNER
REGISTRATION:

Registration Number: _____

Expiration Date: __/__/__

Once completed, please mail this form to:

_____, Project Manager
Department of Public Works
165 Capitol Avenue, Room ____
Hartford, CT 06106

I verify that the above information is true
and complete:

signed

xc: Project File

1.2.2 Certificate of Authority (Instructions for completing)

A Corporate Resolution cannot be self-serving! One officer must certify that another officer is authorized to sign contracts, amendments etc.

Line 1: Enter name of certifying officer (Generally the Secretary or Treasurer of the company.)

Line 2: Enter the title of certifying officer.

Enter the Name of the corporation (Must be the exact name filed with the Secretary of State)

Enter state of incorporation (Does not have to be the State of Connecticut example: Maine, New York.)

Line 3: Enter Date of Board of Directors Meeting in which the resolution was adopted.

Line 5: Enter the name of person the Board of Directors has granted authority to sign contracts and amendments.

Line 6: Enter his or her as applicable.

Enter title of officer authorized to sign contracts and amendments.

Line 10: Enter date of month and month of year Certificate was completed.

Line 11: Signature of certifying officer and affix Corporate Seal.

The actual form can be found in the Appendix "A".

If any questions please contact the Contract Unit at (860) 713-5664.

1.2.3 Certificate of Insurance

The need and types of coverage for all aspects of services being provided to DPW are covered within this manual. Specifics for construction can be found in the General Requirements section of the Technical Specifications in Appendix Y. Our A/E contracts cover the specifics needed for the Design Professionals and that can be found in Appendix AA. The Design Professional Certificate sample can be found in APPENDIX B. The minimum coverages are indicated on that form.

1.3 CONTRACT FORMS

The various contract forms have been developed by DPW for the purpose of entering into a design and/or construction contract with an outside vendor on behalf of the State of Connecticut. These contracts are similar, but not copies, of industry standard contracts. The contracts included in this manual are samples of typical types of contracts that DPW enters into and are developed for each specific type of service or discipline. You will find examples of each contract described below in the Appendix.

1.3.1 Standard Fixed Fee Contract with the Terms and Conditions

This is a typical example of a design contract, it is developed for complete architectural services, with inserts for the Project Manager to modify where appropriate. The contract is not complete without the attached Terms and Conditions. This example can be found in the Appendix AA.

1.3.2 On-Call Contract and Task Letter Assignments

Annually, we advertise for specific disciplines to respond to an opened ended contract usually for a two year period. The terms of the contract are for an upset limited fee, and include all phases of design and usually construction administration. This work will be done for DPW, where quick delivery of a product is needed. Firms are chosen in a similar manner to all of our formal projects. In all cases, the base contract has no funds associated with it, and is fully dependent upon an Agency request to get a particular project done in a very limited time. The funds for the design related work will come from this Agency's funding.

Once the formal base contract is completed, this list is made available to all Project Managers to use if the project demands this type of delivery. The list and assignments are controlled by the DPW selection Board. The assignment is fully dependent upon the request to use this type of delivery system, and the assignments are rotated by the Board to assure even and full use of all of the assigned firms.

Once a project is identified, a request for an On-Call firm is requested. This assignment is then made and an initial meeting of the design professional, Project Manager and usually the Agency is done to develop a scope of work and the associated fees. Once this is complete a Task Letter is developed and immediate work by the design professional can take place. Examples of the base contract and Task Letters can be found in Appendix BB.

1.3.3 Amendments

Changes to existing contracts are modified by either an amendment or Commission Letter. The attached is an example of an amendment to an On-Call Contract. This can be found in Appendix CC.

1.3.4 Commission Letter – Standard

The other form of change to a contract is the Commission Letter, this is normally used when additional duties are being added to the base contract. I.e., examples of this type of work would be the addition of survey work, borings and other subsurface investigation or other specialized service having been determined to be needed after the initial design contract had been signed off by all parties. An example of a sample Commission Letter can be found in Appendix DD.

1.4 Consultant Payments

1.4.1 Standard Fee Breakdown

The Department of Public Works' standard breakdown of a Consultant's fee for basic services provided by a Consultant in connection with a Standard Fixed Fee Consultant's (Architect or Engineer) contract is as follows:

Schematic Design Phase: 15% of total fee;
Design Development Phase: 20% of total fee;
Contract Documents Phase: 30% of total fee;
After receipt of bids or within 120 calendar days after approval of the documents submitted in the contract documents phase, whichever, occurs first: 10% of total fee;
Construction Administration Phase: 25% of total fee.

For other contract types, the fee breakdown will be as negotiated.

1.4.2 Partial Payments

It is the policy of the Department of Public Works not to make payments in monthly installments to consultants during the design phases of the project. However, on projects with an estimated construction value greater than \$5,000,000 the Department may make contractual provisions to pay the Consultant in two equal installments for each of the schematic design and design development phases and three equal installments for the contract documents phase. Each request for installment payment shall be accompanied by a set of progress plans and specifications completed to a stage satisfactory to the Department. The Consultant must identify the need for partial payments during contract negotiations.

1.4.3 Payments During Construction

During the construction administration phase the Consultant may submit monthly invoices for his services based on the percentage of completion of the construction contract until the construction contract reaches 95% complete. At that point, no further payments will be approved until the Consultant's services are complete.

1.4.4 Final Payment

The final payment to the Consultant will not be approved until all services called for in the consultant's contract have been completed to a stage satisfactory to the Department. In the case of construction administration, final payment will not be made until the Consultant has submitted and the Department has approved the as-built drawings. The as-built drawings shall be submitted in the following media: AutoCad drawing files updated to reflect the as-built conditions and a mylar plot of the AutoCad drawing files.

1.4.5 Payments for Extended Construction Administration Services

If through no fault of the Consultant, the construction administration phase is extended by more than 25%, the Consultant may be entitled to additional compensation for that portion of time in excess of the 25% extension. Additional compensation is not guaranteed. The Consultant must document the additional services provided and the amount of time it took to perform the additional services. It is advisable that the Consultant negotiate an hourly rate in advance if he expects to exceed the 25% extension. Regardless of the time extension, the Consultant shall not be compensated for services performed that are a part of his basic services, e.g. preparation of as-built drawings.

1.4.6 Consultant Invoice

In order to efficiently process the Consultant's invoice there is certain information that must be included on the Consultant's invoice. The Consultant's name and address as it appears on the Consultant's contract along with the tax identification number (FEIN# or SSN#) must appear on the invoice. The invoice should be addressed to the DPW Team and Project Manager that is administering the Consultant's contract.

The invoice should include an invoice date and an invoice number.

If the Consultant's contract is a standard fixed fee contract, the invoice shall include the project name and project number.

If the Consultant's contract is an on-call contract, the invoice should include the on-call contract number, the task number, and the project number.

The invoice shall identify by contract paragraph number and description what services are being invoiced for and the amount of the payment requested. The payment must match the contract amount.

If the invoice is for construction administration the consultant shall identify on the invoice the percentage of completion of the construction contract. The percentage of the consultant's construction administration fee billable is limited by the percentage of completion of the construction contract.

A sample Invoice is included for the Consultant's reference in Appendix "D".

1.5 Governmental Agency Exemption Certificate

Upon full execution and approval by all concerned parties of the Department of Public Works' contract with the Consultant, the Department shall issue to the Consultant a Governmental Agency Exemption Certificate bearing the Department's tax exemption number. All subcontractor services provided under the Consultant's contract with the State of Connecticut are not exempt from taxes. The Department of Revenue Services can guide the Consultant as to which services are exempt and which are not. It is the responsibility of the Consultant to clarify tax status of those services with the Department of Revenue Services. The Department of Public works will not entertain any additional payments to the Consultant for taxes. A sample of the Governmental Agency Exemption Certificate with attachment can be found in Appendix "L".

1.6 CONSULTANT PERFORMANCE EVALUATION – ATTACHMENT (A/E Report Card)

This Evaluation handout is meant to be used by the Team PM in conjunction with the design phases of the project. The purpose of this handout is to enhance the expected performance by any Consultant that DPW has working on a project. It is important that the consultant have knowledge that his work will be evaluated at each phase of the project and have understanding of the purpose of the evaluation, which is to ensure that the end product of the design meets or exceeds our expectations. The purpose of the evaluation is to identify early warning signals of a problem developing and a method to correct these potential problems early. It is everyone's goal to produce excellent work at all levels.

This evaluation should be produced at the completion of each identified phase in the Consultant Contract. It should be discussed openly with the consultant team, and allow them to review each evaluation and make comment if they believe that a problem is unfairly depicted. The review should be reviewed with the SPM before being sent to the Consultant. It is intended that this review will remain in the project file, a copy sent to the Administrator of Client teams to maintain a comprehensive consultant file and the Consultant. If necessary a copy can be given to the Agency, but it does not fulfill a purpose, because it is a DPW issue. If a consultant feels that the PM is being unfair, they have the right to review this first with your SPM and then with the Administrator.

THE FORM:

The form is quite comprehensive, if due to the scope of work, a phase or activity is not applicable, please insert **N/A** for a comment. Item #5 is for your use if the problem is with one of the consultant's subconsultants. If a negative statement regards a sub-consultant, they have the right to attend a meeting with the Consultant and yourself to discuss the issues.

The rating is straightforward, use the following definitions for the rating:

Unacceptable	Work has not been done, of the work done it is not sufficient to achieve the desired end product.
Below Standard	Little effort and well below the expected effort defined in the contract, marginal design to meet the program.
Standard	Within DPW expectations for the submission
Above Standard	Advanced beyond the expectation of the contract.
Outstanding	Far superior effort has been demonstrated, well beyond the expectations and scope of the work.

THE ACTUAL PERFORMANCE EVALUATION FORM CAN BE FOUND IN APP. E.

2.1 PROGRAMMING

2.1.1 DPW's Responsibility to Agencies

The Commissioner of Public Works is given broad responsibility to establish and continually review the space standards that are used throughout the State for purposes of establishing budgets and design parameters for State Agencies. In order to accomplish this task, the DPW continually reviews the needs and requirements of the users and is able to assure the legislature that the standards are in the best financial interests of the State in terms of need and quality. It is prudent to revisit these standards on a regular basis since change of mission and equipment is continuing.

This chapter is an attempt to recognize that there are spaces that cannot be easily defined due to singular purpose, special requirements or the fact that existing space is being utilized and the structural system might not lend itself to the dimensions suggested herein. Regardless, the intent of this document is to establish a planning guide to allow budgeting to progress and be based on rational and educated assumptions.

A major purpose of this chapter is to present a series of planning approaches and methods for use by State Agencies in forecasting and calculating space needs required to fulfill their missions. These space planning techniques are based on definitions and objective space assignment criteria and standards drawn from experience in the private and public sectors, that serve as the principal reference for determining the amount of assignable floor area needed for personnel, equipment and support functions.

The DPW goal is to find a solution that provides the best quality space with efficient and well-defined relationships between workers and their supervisors. Additionally, we are seeking to find the best methodology to minimize or reduce space assigned to allow Agencies to optimize their business operations yet provide the high level of service expected. This will assist each Agency to find methods to reduce costs and still maintain morale and performance. One of the areas that we will strive to more clearly define are the work station needs for staff that require "hoteling" work space. These are staff who generally work in the field and need some space to write reports and file necessary field reports, these spaces maybe shared spaces or at least reduced in size.

The methods used in this chapter for forecasting Agency space requirements are herein described. Three levels of planning are presented which can be used to determine future space requirements ranging from a broad long-range estimate to a precise determination of floor area needed. Guidelines are provided to assist agencies in choosing the level of planning that is most appropriate to the status of the information they have at hand.

2.1.2 SPACE STANDARDS PURPOSE

It is an important goal in facilities planning, design and management to maximize the ratio of assignable space to non-assignable space. Contemporary design criteria used by architects and office space planners, for example, are aimed at achieving at least an 80 percent efficiency ratio: that is, 80 percent or more of a building's gross area can be assigned to active functions (such as office workstations, intra-unit circulation, conference rooms, cafeterias, mailrooms, duplicating and photocopy, etc.). The remaining 20 percent or less is non-assignable and represents circulation

(central corridors, stairs, elevators), custodial (janitor's closets, storage of cleaning supplies and equipment), mechanical (restrooms, boiler rooms, utility shafts, telephone and electrical closets, etc.) and structural (exterior walls, interior partitions, unusable areas in basements and attics).

Other building types which generally serve large public gatherings might have large lobbies, wide corridors and extensive mechanical systems, tend to be at the lower end of the efficiency scale, typically 60-70 percent efficient. Exceptions to the 80% efficiency ratio will be analyzed and determined at the time space standard revisions are established.

2.1.2.1 COMPONENTS OF ASSIGNABLE SPACE

Assignable area encompasses all floor space "available for assignment to an occupant, (and) which can be put to useful purposes in accomplishing the Agency's mission." It is important to focus on assignable area as the point of departure for determining an Agency's overall facilities requirements, because such space is the fundamental "building block" of gross floor area calculations. Below are further definitions of the components comprising assignable floor area in State facilities.

Workstations - space for personnel, with desk, chair and other assigned furniture and equipment necessary to perform tasks, whether in a private office with floor-to-ceiling walls or an open office area either with or without modular system partitions.

Support Equipment - other furniture or special equipment (in addition to desks, chairs, and accessories directly assigned to workstations) needed to carry out general office functions. This category includes such items as photocopy machines, central file cabinets, computer terminals and possibly shared-use printers, and work tables.

Support Areas - functional areas and spaces not normally used to accommodate the workstations of office personnel, but necessary for the proper conduct of Agency activities. This category includes conference rooms, reception areas, interview and testing rooms laboratories and other similar functions.

General Services - mail and central supply rooms, printing and high-volume reproduction centers and records management functions are some of the functions included in this category.

Employee Services - lounges, employee health clinics, coffee shops, canteen vending areas, candy counters, news stands and concessions providing conveniences, services and personal items are included in this category.

Building Services - facilities management (e.g., building superintendent's office), shipping and receiving, and bulk supplies and equipment storage are among the functions included under building services.

Large private office space users, such as insurance companies, banks, and corporate headquarters facilities requirements ranging from 10 percent to 15 percent of aggregate assignable space for general services, employee services and building services.

Intra-Unit Circulation - this category refers to the assignable space between

workstations for circulation within functional units, and includes secondary aisles and corridors to tie the various office functions together. A factor of 8-10 percent is used in the standards incorporated in this manual as an add-on for space assigned to office personnel (generally in open areas but excluding private office suites served by public corridors), unassigned equipment and furniture, interview rooms. However, intra-unit circulation space allowances are not added on to employee services and building services functions.

Economies of scale come into play with respect to the assignable-to-gross area used to measure efficiency of space. Experience in facilities management has demonstrated that the smaller the overall facility, proportionally more floor area is given over to non-assignable space requirements. Therefore, smaller agencies require proportionally more assignable space per employee. This disproportion occurs because support areas and unassigned equipment required cannot be shared or need to be of substantial size to perform its function for Agency activities.

2.1.2.2 SPACE PLANNING METHODS AND STANDARDS

This section contains three different space planning models that can be used to determine the space needs of State Agencies. The model used to determine space depends on the level of detail involved and the purpose for which the space will be used.

1. Level I is a general long-range forecasting model for determining gross floor space requirements.
2. Level II provides both assignable and gross space needs based on the numbers and categories of projected personnel, various support functions, and certain assumptions regarding building efficiency.
3. Level III provides a detailed assessment of assignable space requirements, using specific data on authorized and projected staffing, itemized equipment listing and support space.

Levels I and II are useful planning methods for projecting space needs as part of the five-year Facility and Capital Planning Process, while level III is applicable to definitive space requirements.

Level I uses broad space planning parameters and requires the input of only the total number of personnel employed by a State Agency in order to arrive at gross area requirement. This approach is useful for making preliminary estimates of aggregate space needs on a long-range basis. It will provide a rough basis for projected facility requirements when detailed information on staffing levels by specific category and support functions is not available.

Level II is formatted as a computerized space calculation model, and provides a more detailed approach to projecting space needs. While certain assumptions are built into the model regarding workspace for agency employees and floor area requirements for support functions and

equipment, the format is flexible enough to adapt to unique requirements. This method is used where specific data on staffing category projections and other data are available.

Level III requires firm data on agency employees with specific position categories, as well as actual requirements for support space and unassigned equipment and furniture. This space planning method uses computerized worksheets, and has been programmed to automatically calculate requirements based on standards.

LEVEL I Model for Calculating Agency Space Needs

The first general approach to making an approximate determination of space needed by State Agencies is on the basis of aggregate average gross floor area per person. This method of space forecasting takes into account the space needed for agency office personnel and supporting functions, as well as the non-assignable requirements such as corridors, restrooms, stairwells, lobbies and mechanical systems. The standards shown in the following table assume a general mix of office and related space, but do not include allowances for full-service cafeterias or large specialized areas such as public areas found in DMV Branch Offices or client waiting rooms in Human Services' District Offices:

Total Employee Population	Gross Floor Area/ Employee	Facility Size Range (Gross Square Feet)
Under 75 Persons	250	Under 17,500
Under 250 Persons	225	17,500 - 60,000
Over 250 Persons	200	Over 60,000

These standards are useful only in making an initial approximation of space needs. They do reflect empirical observations of real-life situations found in the public and private sectors, and are intended to serve as a "rule-of-thumb" in calculating facilities needs when detailed planning data are lacking. It is important to re-emphasize that the size and functional efficiency of a facility influence the use of Level I planning standards. As noted earlier, smaller buildings tend to be less efficient because of the disproportionate amount of space necessary for lobbies, stairwells, corridors, restrooms, mechanical equipment and other non-assignable floor areas.

Some additional information that might be helpful at this level of detail are:

Office Buildings for State activities should operate near the 80% efficiency level. Whereas, Courthouses and other buildings with heavy public use may at best realize 60% efficiency.

Room types such as classrooms should have 20 sq. ft per student. Hearing rooms and lecture halls should be programmed for 25 sq. ft. per person. Public waiting rooms are typically programmed for 15 sq. ft. per person.

LEVEL II Model for Calculating Space Needs

Determining space needs using the Level II model requires data relative to the numbers and types of personnel and other elements of space use. This forecasting method provides more detail than Level I and is based on the numbers of executive, managerial, professional and clerical staff. It incorporates allowances for conference rooms, general services [Mail, supply storage, records management, etc.], building services [security, shipping and receiving, building maintenance, etc.], and employee services [lounges, coffee shops, new stands, etc.] This planning model also takes into account an agency's requirements to support technology and cafeteria facilities. Assignable space needs are then extrapolated to determine the gross space requirements based on building efficiency, (the ratio of assignable to non-assignable space.) For example, if an agency's assignable space requirement was 800 square feet and the building's efficiency factor is 80 percent, the gross area required would be 1,000 square feet.

Additionally, we recognize even at this level that there exists functions that cannot be calculated as office usage. When we have to address other building types we then can easily utilize the computer generated models that are attached.

Some examples of building types that tend to fall into these categories are:

EDUCATION - Most schools have classroom needs, these are general in nature and differ slightly from RVTS to the collegiate level. This level of analysis does address circulation, basic support for faculty offices at the collegiate level. When special needs arise due to the mission of the school, each specific classroom type will be defined by the Agency.

RESEARCH - Those spaces that are dedicated to long term research that would be found in either collegiate graduate level research or medical research must be defined by the programs generating the need. Other research needs such as teaching laboratories or general research where generic lab space is required can be defined for budget purposes.

TECHNICAL - This particular classification refers generally to staff that are not defined within the Office Standards. Usually they require extensive review of technical documents such as building plans, scientific documents, or Reports. Quite often they also have the need to utilize new computer applications which again require extensive work space to support these job functions. Most often these spaces can be found in DOT, DPW, DEP and DPS where plan review or development is undertaken.

LEVEL III Model for Calculating Specific Space Requirements

This is the most detailed of the space planning models. Space has been determined for various levels of executive, managerial, professional and clerical positions for both systems furniture and standard furniture layouts. Both examples are attached in the Appendix.

The amount of space assigned to each employee by position is based on the determination of area is necessary to permit efficient performance of tasks. Job titles, pay classifications, seniority or rank are not as relevant to space assignment determinations as are the activities actually conducted and the duties performed by personnel occupying office space.

The space allocations should also be sized to accommodate furniture and equipment needed by an office worker to perform assigned tasks. One of several planning techniques for calculating the floor space needed for a given office function is to measure the footprint or floor area occupied by

assigned furniture and equipment and multiply the aggregate by a factor of three. This technique provides for movement and passage space around furniture as well as adequate "elbow room" inside a private office.

The Level III model uses three worksheets when calculated by DPW. The first of these worksheets addresses space requirements for office workstations; the second, unassigned equipment and furniture used by the unit as a whole; the third relates to needed support space. When the time arrives to undertake this operation, the Project Manager will provide you direction and information on how and where this was generated.

2.1.2.3 CONCLUSION

This chapter has presented a series of planning guidelines to assist agencies in determining space needs, and a set of standards and criteria to serve as a uniform basis for calculating those needs. The standards are a common reference point for use by all State Agencies and will eliminate the confusion and contradictions implicit in the use of different (and often conflicting) sources for space calculations. Although the space planning methods described in this manual are adaptable to unique situations, it will be incumbent on State Agencies to show justification for exceptions to the space standards as described in this guidance document.

The space planning methods discussed in this manual have sufficient flexibility to adapt to a variety of applications. For example, the needs of one agency may dictate the use of modular panels and systems furniture as part of an "office landscape plan" layout. Another agency of comparable size will require a more conventional layout of private offices and open unpartitioned areas for general staff. The same space standards and criteria apply to both situations, and although the physical layout will result in distinctly different office environments, parity will occur in assigning space based on functional requirements.

The DPW Process Management Staff stands ready to assist and work with State Agencies in using these space planning methods and standards. The following services are available:

1. Public Works staff can provide Agencies with Level II calculations of space needs forecasts using data input on personnel projections from the Agencies. Please call the Process Management Staff at 566-4266 for assistance in obtaining a Level II space needs forecast.
2. Training and technical assistance will be provided to State Agency personnel in preparing Level III projections of specific space requirements.
3. It is possible for State Agencies to gain direct access to the Level II and III planning worksheets and formats. In order to do so please contact your Project manager for the details.

2.1.3 DAYCARE FACILITIES

The DPW is obligated to provide facilities for this purpose based on certain levels of occupancy within a building or complex. This has been established by the Legislation in the State Statutes Section 17b-739 **Child care facilities in state buildings**. The statutes read: "Whenever the state (1) constructs, acquires or receives as a gift any office building which accommodates three hundred or more state employees or (2) alters, repairs or makes additions to an existing state building which accommodates three hundred or more employees and such alterations, repairs or additions affect at least twenty-five percent of the square footage of such building, the DPW shall

notify the Department of Social Services (DSS). The DSS, with assistance of the Department of Administrative Services, shall determine the need for child care services for the employees in such building and other potential participants. If a demonstrated need for child care exists for thirty or more children of such employees and other potential participants and such care is unavailable, the DPW shall set aside adequate space for child care facilities in such building."

2.1.4 FOOD SERVICE FACILITIES

An Architect/Engineer or other consultants involved in the design of food service must be familiar with the health standards for food establishments required by the Department of Public Health (DPH). To assist the consultants in the design of food service facilities there are two publications available from the DPH, they are as follows:

- Technical Standards for Food Establishments Facility Plan Review
- Food Establishment Plan and Specification Review checklist.

The DPH does not require design document submissions for review and will rely on the **local health inspector** for compliance with the health requirements. Approval or sign-off must be obtained prior to going to bid.

If a private vendor is to manage the food service, the A/E must review the design of the food service facilities with the local health department. See also the "Permits and Approvals" section of this manual.

The food service equipment and installation of the equipment shall conform to the standards of the National Sanitation Foundation (NSF) and NSF Manual on the Sanitation Aspects of the installation of Food Service Equipment.

Contact at the State of Connecticut, DPH Services:

Environmental Health – Food Protect
Bureau of Regulatory Services
Department of Health Public Health
State of Connecticut

Tel. (860) 509-7297

2.1.5 EQUIPMENT GUIDELINES

The DPW provides moveable equipment to most of the projects it undertakes. These services are either provided by in-house personnel or are contracted for by external consultants. In either case, the equipment is ordered through the procurement process, which falls under the Department of Administrative Services. It is most important to understand how this is done to have timely arrival of these goods to coincide with the delivery of the building. The procurement process takes up to six months to order and deliver plus another three to four months to identify and put together a listing of the equipment and funding needed to obtain the supplies. Lastly, space must be available to store the material if the spaces are not ready for immediate installation.

In most cases this work will be a separate contract, there is little need to burden the construction contract with this work since it is not dependent on structural support or mechanical/electrical connection that cannot be made by a simple power cord. In other cases it might be prudent to consider these items within the basic construction contract due to the need for coordination with the general support systems. This determination will be made by the design professional.

General Contract Equipment

Specific information related to the equipment or installation of the equipment shall be included in the plans and specifications under the following conditions:

Where installation and final connections to roughing-in are closely involved with structural features and are so extensive in character that coordination under the supervision of the general contractor is considered desirable.

Where moveable equipment in a given area is closely involved in matching design, finish and space requirements with other similar General Contract equipment in the same area.

General Contract Services

Plans and Specifications shall include:

- a. Roughing, anchoring, installation and final connections where fixed equipment is either specified in the contract documents or included on the moveable equipment list for procurement outside of the General Contract.
- b. Disconnecting, dismantling, moving, relocating, re-assembling, and re-installation with final connections, where existing equipment must be transferred from present locations to the new building.
- c. DPW will be responsible for the review of these items to ensure that they are identified and specified correctly within the contract documents by the A/E or other consultants. The comments will also include details of related installation requirements and utility connections needed for a complete installation of the work.
- d. If moveable equipment is being provided by a consultant, it is expected that a plan will be provided to demonstrate the equipment location, and any coordination needed either by utility connection or location to installed equipment within the base contract.
- e. If loose equipment is being contracted to a consultant, they will utilize the existing DAS program where equipment has been bid under the general purchasing contract. If additional equipment is needed or not already on the bid list, the bid documents will be prepared in conjunction with the DAS format and be bid by that state Agency. All work will be approved by the Connecticut Standardization Committee.

Minimum Standard

Equipment and material specifications, when based on a particular proprietary brand and model, shall list only those points necessary to set the minimum standard as to function, quality, and workmanship that will be required of any proposed alternative to the specified brand. Include the names of three acceptable manufacturers, and their equivalent model, style or quality name or

number. This requirement applies wherever a manufacturer and his product are given in any section of specifications. Do not include "or equal" clause.

Connecticut Manufacturers

Wherever suitable for the purpose and consistent with the budget, equipment of manufactured in Connecticut should be specified.

Commercial Carpet Guidelines

Refer to the building component – Finishes Section

2.1.6 Building Security

1. General

The Building Team needs to be aware of the need for site and building security in all of our projects. Some planning concepts are stated here because of their importance to building planning, but architects should familiarize themselves with the in-depth standards being developed by DPW for security conscious design if your project is triggered by the listing below.

To determine which level of security is appropriate for your building, we have developed a set of minimum-security standards for their holdings. There are vast differences in the types of facilities and their security needs. To complete this analysis, DPW has divided the buildings into three security levels. If your building contains any of the following you need to contact your PM to explore the work and design that will be necessary to include as part of the basic design.

We are utilizing a list of guidelines that have been used by the California/OSHA Guidelines for Workplace Security:

1. Exchange of money
2. Working alone, at night or during early morning
3. Availability of valued items, such as money or jewelry
4. Guarding money or valuable property or possessions
5. Performing public safety functions in the community
6. Mission of the agency involves working with patients, arrested persons, clients, passengers, customers or students known or suspected to have a history of violence
7. Employees with a history of assaults or who have exhibited belligerent, intimidating or threatening behavior to others.

Other factors that could be considered criteria that would trigger concern or at least the need to review the building would be:

- a. Geographic location
- b. Historical data relative to crime at the facility or in the surrounding area
- c. Total square footage of the facility
- d. Number of employees assigned to this location
- e. Hours of operation
- f. Extent of contact with the public
- g. Lack of controlled access (sign-in process)
- h. Lack of security personnel
- i. Lack of electronic card access and/or alarm systems
- j. Lack of video surveillance cameras on the perimeter of the facility

If your building or design involves any of the above, we have to pay careful attention to these structures.

2. General Guidelines

General Layout Many future security problems can be prevented by planning a clear, simple circulation system that is easy for staff and visitors to understand. Avoid mazes of hallways and hidden corners. Exterior doors should be readily visible.

Planning for Future Security Provisions All buildings should be planned to allow for future controlled access both to the entire building and to individual floors

Site Design Building entrances should be designed to make it impossible for cars to drive up and into the lobby. Concrete planters make excellent barriers; bollards are also acceptable if well integrated with the design of the building entrance. In general underground parking for public or delivery is to be avoided. Driveways and other vehicle access next to the building if possible should also be avoided.

Landscaping landscaping should be planned in such a way as to avoid creating potential areas of concealment for criminals. The placement of trees in close proximity to buildings and walls or fences where they can be used to get to an upper floor or breach perimeter security should also be avoided.

Parking Lots and Garages security for parking lot and garages as well as loading dock areas must also be thoroughly planned out. Appropriate fencing, lighting, landscaping, access control, panic alarm stations, video surveillance cameras, location of visitor spaces, whether or not there is to be direct access to a facility from a garage and the design and location of stairwell and elevator cores are some of the items that must be taken into consideration with any project involving these types of areas. Whether or not electronic security systems are to be installed at the time of the project, provisions should be made for future deployment.

Building Entrances State buildings should have one main entrance for staff, visitors and the public. In large buildings a second entrance may be designated for employees only. Buildings may have additional doors used for egress or access to service areas. These doors should not be used as entrances. If this cannot be avoided, the issues must be discussed at length with DPW Security Unit and the user Agency(s).

Building Lobby The building lobby should always be designed to permit subdivision into a secure and a non-secure area. The two areas could potentially be divided by turnstiles, metal detectors or other devices used to control access to secure areas. There should be space on the secure side for a control desk and an area where bags can be checked. Mechanical ductwork, piping and main electrical conduit runs should not extend from one area to the other.

Shops Shops (stores) should be located on the non-secure side of the lobby. Exceptions could exist where commercial establishments service the building population only.

Elevators Elevators serving the upper levels should be visible from the lobby and arranged so at least one car can be designated for secure traffic in the future. This elevator should be accessible from the future secure side of the lobby only. Generally, elevators should not travel between the parking levels and the upper floors of a building. A separate bank of shuttle elevators should connect the parking garage with the "non-secure" side of the lobby only. Employees and visitors then pass to the secure side and take elevators to the upper floor of the building.

There may be exceptions to the above, these must be discussed with your PM as well as with the DPW Security Unit to resolve any non-conforming design.

Mechanical and Electrical Spaces Access to mechanical and electrical spaces should be from the inside of the building, located on the secure side of the (potential) security point in the building lobby.

Exterior lighting is one of the most over-looked yet effective means of preventing criminal acts in or around property. Therefore it needs to be designed with safety and security as the first priority. Whether or not video surveillance cameras are installed around the outside perimeter, the lighting designer should assume this would occur at some point and plan appropriately.

2.3 SITE PERMITS, APPROVALS, AND REQUIREMENTS

2.3.1 Environmental Impact Studies

Environmental Assessment

The consultant selected for the design will not be expected to prepare an Environmental Assessment (EA) analysis. If an environmental assessment analysis is required the State will contract with an independent environmental consultant to prepare the document. The design consultant should provide the environmental consultant with current design information, drawings and site plans to incorporate into the environmental document. Normally, the environmental assessment and the design are developed simultaneously. The design consultant is expected to review the environmental documents to insure information with respect to the design is accurate, and that the agreed upon mitigation measures can be incorporated into the design, and are incorporated into the construction documents. The State requires that the designers and environmental consultants cooperate with each other to insure that the environment assessment report is a comprehensive, concise document. The final document may be entitled either a Finding of No Significant Impact (FONSI) or Environmental Impact Evaluation (EIE).

For historical requirements refer to Historic Buildings.

The project number shall appear on all environmental documents at the bottom right hand corner of each page, similar to construction document specification format referred to in this manual.

2.3.2 Storm Water Discharge

Standards

General: The purpose of the storm water discharge requirements is to ensure that state facilities are constructed and operated in a manner which conserves and protect the waters of the state.

The A/E, via the professional civil engineer, during design, and the general contractor, during construction, shall both conform to the requirements of DEP's storm water and wastewater discharge regulations and shall use current "Best Management Practices" such as the "Connecticut Guidelines for Soil Erosion and Sediment Control", Section 1.1, Environmental Protection, Form 814-A, or other practices acceptable to Department of Environmental Protection.

All projects that involve site work require a "Soil Erosion and Sediment Control Plan" or a "Storm water Pollution Control Plan" is prepared. The type and complexity of the plan will depend on the size and particular conditions of each site:

- If the construction on a site disturbs five (5) or more acres, a "Stormwater Pollution Control Plan" that conforms to the "General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities - guidelines" shall be prepared.

2.3.2 Cont.

- If the site disturbance is less than five (5) acres, a "Soil Erosion and Sediment Control Plan" that conforms to the "Connecticut Guidelines" shall be prepared. A Soil Erosion and Sediment Control Plan is a "simple" Stormwater Pollution Control Plan.

If the construction activities will result in the disturbance of five (5) or more total acres of the site and the other conditions for eligibility for a "General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities" are met, the A/E shall prepare and submit a general permit registration to the Department of Public Works (DPW) for submission to the Department of Environmental Protection (DEP). Provide copies, with support documents, to the general contractor for record files at the construction site. *Note:* The term "General Contractor" shall refer to either the "General Contractor" or the "Construction Manager", whichever is applicable.

If required by DEP, an individual permit for the project shall be obtained.

Responsibilities of the Architect/Engineer (A/E) and General Contractors (GC)

The A/E, through their professional civil engineer shall:

- During the preparation of the A/E contract scope, the A/E shall meet with DEP to determine which type of plan and permit will be required for the project.
- Prepare a Soil Erosion and Sediment Control Plan, a Stormwater Pollution Control Plan, a general permit registration, and/or the documentation required for an individual permit, as appropriate.
- Assist DPW to obtain DEP review of the documents.
- Provide DPW with the documents required for submission to DEP.
- Include in the project specifications that the general contractor meets their responsibilities in regards to storm water discharge.
- Include in the Contract Documents the Soil Erosion and Sediment Control Plan/Stormwater Pollution Control Plan with the related text and details, and the general permit "registration".
- During construction, the A/E via their professional civil engineer, shall, with the General Contractor, walk the site once a month to inspect all soil erosion and sediment control/storm water pollution control provisions.

The General Contractor shall:

When a Stormwater Pollution Control General Permit is not required.

- Be fully responsible for soil erosion and sediment control.
- Conform to the Soil Erosion and Sediment Control Plan included in the contract documents or other plans approved by DPW and DEP. The plan shall be prepared at the General Contractor's own expense.

2.3.2 Cont.

When a Stormwater Pollution Control General Permit is required.

- Be fully responsible for storm water discharges by submittal to DEP a revised general permit registration.
- Conform to the Stormwater Pollution Control Plan included in the contract documents or other plans approved by DPW and DEP. The plan shall be prepared at the general contractor's own expense.
- Sign and cause to be signed by each appropriate subcontractor, the "Certification Statement" required by the General Permit.
- Provide, maintain, and monitor a rain gauge on the site; the monitoring procedures shall include maintaining a record log of the readings. The general contractor shall provide the rain gauge.
- During construction, the general contractor shall inspect the site in conformance with the General Permit, including an inspection at least once every seven days and within 24 hours of the end of a storm that is 0.5 inch or greater, as shown by the on-site rain gauge.

When a Stormwater Pollution Control Individual Permit is required.

- Obtaining and comply with the terms of the individual Permit and be responsible for stormwater discharge.

2.3.3 Utility Hookups

During the design the Architect/Engineer shall identify and coordinate with the applicable utility company all issues pertinent to the proper installation of utilities on a project. Examples of the tasks that shall be completed by the Architect/Engineer are as follows:

- Obtain from the local jurisdictions written authorization to connect to the public water supply system, storm drain system, sanitary system, etc. (See Utilities re. Checklist for Permit and Approvals)
- Identify in the construction documents all fees to be carried by the general contractor in his bid for utility connections to the public utility systems.
- Coordinate with the regulated utilities (e.g., electric company, gas company, etc.) the requirements that must be completed to properly install the utilities. Identify all fees and other costs associated with the utility hookups so that DPW can process a purchase order in a timely manor to avoid delay. Complete Checklist for Permits and Approvals and return to the DPW-Project Manager.

The A/E shall submit the design development drawings to the local utility owner before inclusion into the project documents.

2.3.3 Cont.

The drawings submitted at the design development (CD) phase shall be complete drawings with respect to the Consultants Manual requirements and shall clearly indicate all expansions, additions, or relocation of utility systems which connects to the local utility. The documents must also clearly show the nature and extent of the work, the details for the construction, and note the sequence of the construction, as appropriate. The task shall be directed and coordinated by the prime design professional. All relocation or extensions of major local utility or agency underground utility lines shall be prepared under the direction of a registered professional engineer competent in this area of design and construction.

Subsequent the resolution of all comments raised with respect to the design development drawings, DPW will approve the submission of the CD phase utility drawings to the local utility agency, as appropriate.

Easements may be required for several reasons, some of which are as follows:

- Construction on or in close proximity to adjacent property.
- Off-site utilities.
- Off-site storm water runoff.

Temporary and/or permanent easements may be required with Agreement of Maintenance for items, which may be overhead or on or below the surface. If easements are required it should be indicated on the Checklist for Permits and Approvals.

A legal description and map shall be provided by the Architect/Engineer which, in turn, shall be forwarded to the DPW-Leasing Unit by the DPW Project Manager. The A/E may provide the documents and other required information as additional services unless otherwise determined.

2.3.4 Underground Storage Tanks

a. General

Underground storage tanks must be designed and installed in accordance with federal regulations (40 CFR 280 and 281), state regulations (22a-449 (d) -1), NFPA 30, NFPA 31, NFPA 327, API 1604, and all other applicable state and federal regulations. The contractor must comply with OSHA regulations for hazardous waste operations (29 CFR 1910.120) if contamination is found or suspected

DPW require all tank removal or replacement projects include soil samples be taken of the side walls and bottom of the tank grave, and the samples be analyzed for evidence of contamination (Analytical Method 8020 and 8010; TPH (418.1) and MTBE for all tanks; and PCBs, Chromium, Lead, Cadmium, and Arsenic for waste oil tanks) at a Connecticut certified laboratory. A report of the laboratory results must be sent to:

*Underground Storage Tank Unit,
Department of Environmental Protection
165 Capitol Avenue,
Hartford, CT 06106.*

Refer also to the Checklist for Permit and Approvals.

2.3.4. Cont.

Contractors shall be required to stop work and notify the DPW Construction Coordinator (CC) in the event that a contamination is discovered. The DPW has established guidelines for the continuation of the work and the investigation of the contamination subsequent to the detection.

Any excavated soil from the tank grave to be removed from the site must be sampled and analyzed as above before removal from the site.

New Installations: All gasoline and diesel tanks shall be double-wall tanks with interstitial monitoring. All heating oil (#2, #4, and #6) tanks shall be single wall or double wall tanks as appropriate to meet the operational needs of the agency and protect sensitive receptors. Upon request, sample specifications may be obtained from the DPW-Underground Storage Tank Program Unit.

The A/E should assist the agency in the registration of tanks, which must be within 30 days of installation. The A/E shall complete the tank registration form and file the form with the underground storage tank unit. The form must be signed by the agency. If there are questions about underground tanks contact:

*Underground Storage Tank Program
Department of Public Works
165 Capitol Avenue
Hartford, CT 06106*

Tel. 860) 566-4501 or FAX (860) 566-6327

SITE WORK

Basis of Bid

The construction documents shall provide sufficient data to determine the appropriate base bid quantities for all required work including, permanent sheeting and shoring, underpinning etc. The documents shall provide all necessary detailed requirements, procedures and restrictions.

If the subsurface data and any other information indicates that the potential of rock excavation is anticipated to complete the project, the designer is to develop estimated contours of the top of rock from the borings/survey information and shall indicate them on the drawings for the contractor to include the rock excavation in the base bid. If unsuitable material that requires removal is anticipated, then the horizontal limits, the upper and lower limits defined by contours of removal are to be indicated.

Refer also to Special Unit Prices in this manual

If unanticipated rock requiring excavation is encountered during construction, where it is economically advantageous to the State because of cost differences between trench and mass excavation and with allowance for backfill, trenches are to be combined and/or expanded to mass excavation limits.

2.3.4 Cont.

If extended foundations such as end bearing piles, caissons, etc. are to be used, contours on worksheets of the estimated bearing surface, developed from the subsurface data, are to be provided with the review sets. If extended foundations such as friction piles are to be used, worksheet cross sections indicating materials strata, not limited to gradations, and estimated foundations are to be submitted with review sets.

The phrases "as necessary", "as required" or similar such phrases are not to be indicated within the contract documents.

The intent of this paragraph is that the utilities are both on the drawings for design purposes and that public and agency utilities are marked in the field during construction. With just the "Call Before You Dig" note in the documents, which is a State Regulation, the contractor or agency may not mark the agency utilities and therefor cause disruption of facilities.

The designer should be required to contract with a firm, qualified in locating utilities using underground utility locating equipment to mark agency owned utility locations, which is to be then picked up by the surveyor and indicated on the Design Development Submission.

In that utilities within State property may not be public utilities, the requirement on the construction documents for the determination of the location of utilities is not to be limited to "Call Before You Dig". It is also required to be indicated that a Land Surveyor registered by the State of Connecticut (or the firm that originally located the utilities) be retained by the contractor to mark on the ground the locations of all existing utilities within the construction area.

Specification

Specifications are to be provided for all work indicated on the drawings. No extraneous specifications pertaining to work that is not a part of the specific project are to be provided.

The specifications are to be clear, compact and concise. For example the earthwork section should include all mass and trench excavation for soil and rock, all fill and backfill including structural fill and any other special fills (other than pavement bases and trench bedding), dewatering, and sheeting and shoring. If specific sheeting and/or shoring are indicated on the drawings as a part of the contract then it is the option of the designer as to whether it is to be a separate section. Another example is the bituminous paving section which should include the paving, the base courses, patching, bituminous curbing, stripping and sealing. Separate sections should not be used for each individual minute item.

2.3.4. Cont.

The specifications and project requirements are to reference the latest edition of State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction which is presently indicated as Form 814A (Form 815 for metric units) dated 1995 which will hereinafter be indicated as Form 814A. Materials in Part 2 of the specifications are to be referenced to specific applicable subsections of Division III of Form 814A and execution in Part 3 of the specifications are to be referenced to specific subsections of Division II of Form 814A. If a specific paragraph, sentence or requirement of a sub-article is not applicable to the project, it is to be specifically indicated as such.

For example it is expected that certificates of compliance will be required in place of bituminous plant inspections indicated in Form 814A Article 4.06.03-2 which the Department of Public Works does not do and therefore this specific paragraph would be one that would be indicated as "not applicable."

Drawings

All site drawings are to be orientated in the same direction and in the same direction as the drawings of all other professional disciplines.

For site drawings, existing conditions shall be screened or line work is to be dashed. Line work for indication of buildings, contours every 5th contour (similar as to on USGS quadrangles), utilities, edges of pavement etc. shall be of different weights for each and/or of different types of dashed lines.

2.4 BUILDING – PERMITS, APPROVALS AND REGULATIONS

2.4.1 Code Analysis and Regulations

A. Current Codes

Connecticut Building Codes:

- BOCA NATIONAL BUILDING CODE (1996)
- INTERNATIONAL PLUMBING CODE (1997)
- INTERNATIONAL MECHANICAL CODE (1996)
- NATIONAL ELECTRIC CODE (1999), NFPA 70 (1999)
- CABO ONE AND TWO FAMILY DWELLING CODE (1995)
- ANSI A117.1 (1992) PROVIDING ACCESSIBILITY AND USABILITY FOR PHYSICALLY HANICAPPED PEOPLE.

Available from: BOCA International

*4051 Flossmoor Road, Country, Club Hills, Illinois 60478-5795
Telephone (800) 323-1103, FAX (708) 799-4981.*

- CONNECTICUT BUILDING CODE SUPPLEMENT (May 1, 1999)

Available from: The Commission on Official Publications (COLP)

*111 Pheonix Avenue, Enfield, Connecticut 06082
Telephone (860) 741-3027
~ after date of adoption.*

Connecticut Fire Safety Codes:

- The Code for Safety to Life from Fire in Buildings and Structures of the National Fire Protection Association, Inc., Standard 101, 1997 Edition, [NFPA 101/1997]

Available from: National Fire Protection Association

*1 Batterypark, P.O. Box 9101, Quincy, MA 02269-9101
Telephone (800) 344-3555.*

- CONNECTICUT FIRE SAFETY CODE SUPPLEMENT (May 1, 1999)

Available from: Commission on Official Publications (COLP)

*111 Pheonix Avenue, Enfield, Connecticut 06082
Telephone (860) 741-3027
~ after date of adoption.*

B. Modifications to Code Requirements

Request for Modification.

The requirements and procedures for a request for a modification to the current codes are as follows:

Application forms for modification to codes:

- Request for Modification of the Connecticut Basic Building Code. See Appendix (?)
- Request for Modification/Relief of the Requirement of the Connecticut Fire Safety Code. See Appendix (?)
- Handicap Exemption Request Form. See Appendix (?)
- Information Necessary to Formally Request Approval for Inclined Wheelchair Lifts and Inclined Stairway Lifts. See Appendix (?)

The need for modification(s) to the appropriate codes shall be identified and submitted by the A/E at the Schematic Design Phase.

The A/E shall complete the appropriate request form for modification and shall be identified as the applicant. Where the "Handicap Exemption Request Form" requires an applicant sign the form, DPW shall provide the notarized signature.

The A/E shall submit a completed form of the request for modification and provide the DPW-Project Manager with two sets of prints and written description of the need for the modification.

The DPW Project Manager shall request the DPW reviewer to review the proposed modification for completeness and transmit the request to the "authority having jurisdiction" i.e., State Building Inspector (SBI) or State Fire Marshall (SFI) with instruction to direct all questions to the A/E. The DPW code reviewer shall also forward a copy of the transmittal letter to the DPW-Project Manager and the A/E.

The A/E shall be responsible for all efforts necessary to obtain a resolution to the request for modification from the "authority having jurisdiction".

Caution. If approval or disapproval of the request for modification is not received prior the submittal of the Tracings & Masters a delay in the "sign off" approval by the DPW code reviewer may occur that could adversely effect the project time schedule.

If the request for modification is disapproved the A/E will be responsible for all delays and changes necessary to produce the construction documents on time and in compliance with the requirements of the codes.

C. Threshold and Non Threshold Structures

Applicable Codes

The applicable codes for "Threshold Limit" and "Non-Threshold Limit" structures are as follows:

(a) THRESHOLD LIMIT STRUCTURES - the applicable codes shall be the codes in effect at the date of the application to the State Building Inspector for a Building Permit.

(b) NON-THRESHOLD LIMIT STRUCTURES - the applicable codes shall be the codes in effect at the date of bid.

(a) REQUIREMENTS FOR "THRESHOLD LIMIT" STRUCTURES

Definition

The term "Threshold limit" is defined and shall apply to any new structures or additions that equal or exceed the limits which are as follows:

Height: 4 stories, 60 feet high.

Clear Span: 150 feet in width.

Floor Area: 150,000 square feet total gross floor area.

Occupancy: 1,000 persons.

Use Group: I-Institutional

I-1 Residential Care 150 Beds or persons

I-2 Incapacitated Care 150 Beds or persons

I-3 Restrained, Jails and Asylums 150 Beds or persons

R-Residential

R-1 Residential - Hotel/Motel Single structure with 200 rooms

R-2 Residential - Multifamily Single structure with 100 dwelling units

S-Storage Parking structures with 1,000 cars

S-1 Moderate Hazard 250,000 square feet

S-2 Low Hazard 250,000 square feet

Requirements for "Threshold Limit" Structures and Additions to Existing Buildings

All new structures or additions to existing buildings and existing buildings that equal or exceed the threshold limit shall comply with the following requirements in addition to the other code requirements for threshold limit buildings.

2.4.1. Cont.

Codes.

The codes in effect on the date of the application to the State Building Inspector for a Building Permit shall be the applicable code for design of the building.

BOCA Plan Review Forms.

The BOCA Plan Review Forms shall be completed by the A/E and submitted to the DPW-Project Manager. The DPW-Project Manager shall include the plan review forms with the application for a building permit to the State Building Inspector.

Building Permit.

The DPW-Project Manager shall file an application form for a building permit and three (3) copies of the plans and specifications to the Building Inspector. A copy of the application form shall also be forwarded to the design consultant.

The General Statutes of Connecticut requires that State Building Inspector review the plans and specifications for compliance with the State Building Code. The State Building Inspector shall issue a building permit within thirty (30) days of the date of application for the permit, in part or in whole, or deny the application for a permit. The State Building Inspector may request the State Fire Marshal review the plans for compliance with the State Fire Safety Code.

If there is no response at the end of thirty (30) days review period the A/E shall contact the State Building Inspector to obtain the status of the application for the building permit. The A/E shall be responsible for all efforts necessary to obtain a permit.

A statement of Special Inspections shall be submitted as required by DPW Procedure with the application for building permit.

(b) Requirements for "Non-Threshold" Structures

All new structures or additions to existing buildings and all existing buildings that do not equal or exceed the threshold limit shall be in compliance with the requirements as follows:

The applicable codes for non-threshold limit structures shall be the codes in effect at the date of bid.

A statement of Special Inspections shall be submitted as required by DPW procedure with the application for building permit.

Building Information Form.

The Schematic Design Phase requires that the building information be included on the drawings to be submitted for review and approval.

D. Third Party Review- Structural

A requirement for Threshold Limit Structures. The DPW Project Manager shall arrange for an independent engineering consultant to review the structural plans and specifications and include the review with the application form for a building permit.

E. Certificate of Code Compliance

Threshold Buildings

Prior to bid, the design professional shall complete and submit PART-A of the Certificate of Compliance with the tracings and masters (T&M) to the Department of Public Works and certify that the documents have been designed in accordance with the current codes.

Prior to occupancy of the building the design professional shall complete and submit PART-B of the Certificate of Compliance to the Department of Public Works. The Commissioner of the Department of Public Works is not required to sign the Certificate of Compliance for buildings that equal or exceed the threshold limit.

Non-Threshold Buildings.

The Commissioner of the Department of Public Works shall certify that the plans and specifications are in substantial compliance with the provisions of the following codes, as required by the General Statutes of Connecticut for all projects under his authority:

- State Building Code
- State Fire Safety Code

Prior to bid, the design professional shall complete and submit PART-A of the Certificate of Compliance with the tracing and masters (T&M) to the Department of Public Works and certify that the documents have been designed in accordance with the current codes.

Prior to occupancy of the building, the A/E shall complete and submit PART-B of the Certificate of Compliance, to the State Building Inspector.

F. Certificate of Occupancy

a. Threshold Buildings

The General Statutes of Connecticut requires that no state building or structure erected that equals or exceeds the threshold limits shall be occupied or used in part or whole until the State Building Inspector has certified the building or structure is in substantial compliance with the provisions of the state building codes and regulations.

Prior to occupancy of the building, the design professional shall complete and submit PART-B of the Certificate of Compliance to the Department of Public Works without the signature of the Commissioner of the Department of Public Works.

The Department of Public Safety shall issue the Certificate of Occupancy for structures that equal or exceeds the threshold limit.

2.4.1. Cont.

b. Non-Threshold Buildings.

The General Statutes of Connecticut requires that no state building or structure erected or altered shall be occupied, or used in part or whole, until the Commissioner of the Department of Public Works certifies to the State Building Inspector that the building or structure substantially complies with the provisions of the State Building Code and general statutes.

Prior to occupancy of the building, the design professional shall complete and submit PART-B of the Certificate of Compliance, to the State Building Inspector.

The Commissioner of the Department of Public Works will sign the Certificate of Occupancy for project that do not exceed the threshold limit

2.4.2 Historic Buildings

a. Protection of State-Owned Historic Properties

State-owned resources that have been determined to be historic properties are protected under the Connecticut Environmental Policy Act (CEPA). The CEPA process attempts to minimize or to avoid an adverse affect on State-owned properties listed on the State Register of Historic Places. CEPA regulations mandate State agencies prepare environmental classification documents and to coordinate the development of facilities with the Historical Commission.

b. Guidelines for the Rehabilitation of Historic Buildings

Rehabilitation of historic buildings is outlined in "The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Revised 1990)", which is available from the project manager at the Department of Public Works. Any building or site that is listed on the National Register or State Register of Historic Places shall be submitted to DPW for review by the State Historical Commission. The design shall incorporate all directions given by the Historical Commission as the approved budget allows. All work by the Architect/Engineer for Historical Submissions shall not be considered an additional service to the basic A/E contract.

c. Environmental Review for Impact to Architectural and Archaeological Resources

Notice will be sent to the Connecticut Historical Commission (CHC) for all projects for an evaluation of the potential impact on cultural resources under the provisions, of the Connecticut Environmental Policy Act. Typically, a copy of the minutes for the scope of work meeting with the agency and the A/E will be sent to the CHC. Certain projects that involve ground disturbance in archaeologically sensitive areas may require a survey.

When an Environmental Assessment (EA), Finding of No Significant Impact (FONSI) or an Environment Impact Evaluation (EIE) is prepared the state historical commission will be contacted for review comments. The DPW-Project Manager has access to the list of state-owned properties on the State Register of Historic Places (Ref. Book 4 - use 5 digit DPW building number).

Contact: *Historical Architect
State of Connecticut Historical Commission
59 South Prospect Street, Hartford, CT 06106.
Tel. (860) 566-3005*

2.4.3 Artwork

a. Guidelines for Architects/Engineers

The State of Connecticut has adopted regulations (Sec. 4-131a-1 through 4-131a-13 and as amended by Sec 4b-53-1 to 4b-53-4)) that certain bonded projects open to the public will have 1% of the bonded funds allocated to enhancement of State buildings with quality works of art by living professional artists and craftsmen. The purpose is to provide the citizens of Connecticut with an improved public environment. This work includes but is not limited to, fresco, mosaic, sculpture and other architectural embellishment or functional art created by a professional artist. Work of art does NOT mean landscape architecture or landscape gardening.

The works of art are funded through the Department of Public Works (DPW) in conjunction with the Connecticut Commission on the Arts.

2.4.3. Cont.

Coordination of the artwork, shall be the responsibility of the A/E and the artist with communication through the Connecticut Commission on the Arts. The Arts Commission will select the artists, the type of artwork and negotiate the artist's contracts, which will be processed through the DPW. Contact the DPW-Project Manager.

The A/E will be responsible for coordination and installation of the artwork into the building design including all services such as electrical power, lighting, anchors, etc., and for coordination between the artist and the general contractor the cost will come from the artist funding.

b. **The Architect/Engineer shall, as mentioned above, do the following:**

- Recommend specific sites for artwork and the scale and type of artwork considered most appropriate.
- Consult with the selection panel on the type of artwork and location.
- Maintain a close working relationship with the artist.
- Oversee and approve the installation of the artwork.
- Assure that all service requirements for the artwork are included in the design documents and that the artwork is efficiently and expeditiously installed.

The Architect/Engineer is invited to attend art review meetings but attendance is not a requirement. Fee for coordination services shall be included A/E's basic fee.

c. **Additional information may be obtained from:**

*The Connecticut Commission on the Arts
1 Financial Plaza
Hartford, Connecticut 06103
Tel. (860) 566-4770*

2.4.4 Energy Evaluations

- Life Cycle Cost Analysis Determination Form
- Life Cycle Cost Analysis for New Building or Additions to Existing Buildings
- Life Cycle Cost Analysis for Renovations to Existing Buildings

Any new building, addition or renovation to an existing building, or building to be used as a school, that is owned or funded by the State of Connecticut shall require a Life Cycle Cost Analysis Determination Form to be submitted the Department of Public Works (DPW). The data shall be evaluated by the DPW Chief Engineer/Architect to determine if a Life Cycle Cost Analysis (LCCA) is required. The DPW-Project Manager will distribute the forms to the A/E at the initial scope meeting. The A/E shall then return completed forms within 30 days so that DPW can determine, before an A/E contract is signed, if a LCCA is required. The LCCA shall conform to State Statute Sec.16a-38.

- Connecticut General Statutes, Sec. 16a-38, requires that such analysis be performed by design professionals in the design of these buildings in order to explore all reasonable alternate designs for life cycle cost effectiveness.
- The Architect/Engineer must prepare and submit the LCCA in the manner indicated required. Energy Goals shall be consistent with ASHRAE/IES 90.1-1989 Energy efficient design of new buildings except new low-rise residential buildings, and or BOCA 1990. The LCCA approval requires approval by both DPW and the Office of Policy and Management (OPM).

2.4.4. Cont.

- A narrative description including three (3) different types of heating, cooling, ventilation and domestic water heating systems shall be provided by the A/E with the schematic design submission. The systems, along with any comments from the agency and/or DPW, will form the basis of the LCCA. The LCCA shall be submitted and approved during the design development phase. LCCA review comments and acceptance will be issued by DPW-Engineering. Any changes in the design will require a new LCCA to be submitted.

All school projects that do require a LCCA, but are not the responsibility of DPW-Project Manager, shall be coordinated with:

*Department of Education
165 Capitol Avenue, Room 252
Hartford, CT 06106
Tel. (860) 566-5497*

An LCCA Determination Form and applicable LCCA information for all school projects are required to be submitted to DPW Engineering for review.

2.4.5 Energy Conscious Design

Energy Conscious Construction Program (NU) and Energy Blueprint (UI)

The Department of Public Works (DPW) participates with both Northeast Utilities (NU) and United Illuminating (UI) utility companies in energy saving programs. All Architects/Engineers are required to participate in the programs if the project that qualifies for the program. The applicable energy program and the particular utility company will be depend upon the geographical location of the project within the state. The coordination person for implementation of the program is the DPW-Project Manager. The DPW-Contracts Unit will process project specific addendum to NU or UI and/or State agreements. Information is available upon request from DPW.

The A/E shall identify in each section of the technical specifications and the items to be specified for energy incentives offered to the State by the utility company. The A/E shall also determine the energy conscious design criteria that will qualify the State for the cost benefits.

Contact: *Northeast Utilities
The Connecticut Light & Power Company
Program Administrator
PO Box 270
Hartford, CT 06141-0270
Telephone: (860) 665-2711*

*United Illuminating
Program Administrator
PO Box 1564
New Haven, CT 06506
Telephone: (203) 499-2042 FAX: (203) 499-3611*

2.4.6 Life Cycle Cost Analysis

To obtain information about Life Cycle Cost Analysis (LCCA) or a copy of the requirements, contact the DPW Project Manager.

2.4.7 Fire Protection and Water Supply

All buildings that require sprinkler and/or standpipe systems shall conform to the codes and DPW requirements, which are as follows:

- Connecticut State Building Code.
- Connecticut Fire Safety Code.
- DPW Consultants Procedure Manual.

Administration, Code Compliance.

Design, Building Component, Mechanical - Fire Protection.

General Conditions and Bid Documents.

Section 5, Shop Drawings: Sprinkler system shop drawings and hydraulic calculations must be stamped by a professional engineer licensed in the state of Connecticut and must include the DPW project number. Two (2) sets of information noted in Section 5, c. (5) shall be submitted to the State's Insurance Carrier (SIC), and one (1) set shall be submitted to the State Fire Marshals (SFM) office as follows:

STATE INSURANCE CARRIER (SIC):

*The Travelers Indemnity Company,
Engineering Specialist
One Tower Square 8CR
Loss Prevention and Engineering
Hartford, CT 06183*

Tel. (860) 277-8021, Fax (860) 954-6727

STATE FIRE MARSHALS (SFM):

*Deputy State Fire Marshal
1111 Country Club Road, PO Box 2794,
Middletown, CT 06457*

Tel: (860) 685-8380

Before the shop drawings are submitted to SIC or SFM, the A/E and/or the A/E fire protection consultant must review the sprinkler design for compliance with the code and DPW requirements. SIC review comments will be addressed to the DPW Chief Engineer. The DPW Chief Engineer shall confirm to the A/E any changes required by SIC/SFM. The A/E is responsible for changes that result from the SIC and/or SFM required during construction.

2.4.7 Cont.

The State Insurance Carrier (SIC) requires two- (2) weeks prior notice of a sprinkler system acceptance test.

Water Supply.

The A/E shall provide as part of the design development review submittal water supply technical data. The data must be obtained within the past two years from a water-flow test approved by DPW. If data is not available the A/E shall cause such a test to be conducted to acquire the information. The water test shall conform to the procedures described in the National Fire Protection Association (NFPA) Standard 291, "Fire Flow Testing and Marking of Hydrants", 1988 edition; or the procedures described in the NFPA Handbook "Testing of Water Supplies". The results of the water flow test shall be plotted in the form of a three-point curve to ensure accuracy of the test results. The water flow test report is to be included in the "Sprinkler" section of the specifications.

2.4.8 Telecommunications and Data Systems

General

The State of Connecticut accepts the EIA/TIA Building Telecommunications Wiring Standard as the standard to be used in the design and implementation of voice and data wiring systems for new and renovated State facilities. These standards have been designed for use by state agencies, space planners, budget planners, architects and engineers, business and facilities managers, communication personnel, vendors and manufacturers that provide services to the state.

The Connecticut State University (CSU) and the Judicial Department may have additional standards and requirements for their facilities.

A copy of the minutes of the initial scope meeting for projects that have telecommunications requirements shall be sent to the Department of Information Technology (DOIT) and the Department of Public Works (DPW) the addresses of which is as follows:

*Department of Information and Technology (DOIT)
Communication Services - Room 328
340 Capitol Ave.
Hartford CT 06106
Tel. (860)566-6250*

*Department of Public Works (DPW)
Technical Services Unit – Room 265
Hartford, CT 06106
Tel. (860) 713-5722*

2.4.8. Cont.

Responsibility of the A/E, DOIT/Consultant, DPW and Agency

Architect/Engineer

Site Raceway Distribution: Design the underground raceway/duct-bank distribution system, to accept the incoming Telephone Service.

Coordinate requirements with SNET, DOIT, DPW and the Agency. Obtain a confirmation with regard to all service details from the utility (see Checklist for Permits and Approvals).

Telecommunication Rooms: Provide space within the building for the main telephone room (BMDF), Intermediate telephone rooms (IDF), and Computer Rooms, to accept the voice and data cabling systems and equipment. Rooms shall conform to the requirements of the EIA/TIA-568A/569 standards. A/E is to coordinate requirements with DOIT and DPW-TSU.

Building Raceway Distribution: Provide an empty conduit system including cable troughs for all horizontal and vertical runs between the BMDF, IDF, computer rooms and all work stations to allow for the installation of the voice, data and video cable systems. A/E is to provide riser diagrams and coordinate requirements with Agency, DPW-TSU and DOIT. Include all raceway distribution requirements outlined in EIA/TIA 569 "Telecommunications Pathways and Spaces", under a separate electrical section, (i.e., **Section 16750 – Telecommunication Raceways and Distribution Systems**).

Telecommunications Cabling Distribution: Telecommunications cabling design and installation shall not be part of the A/E's design responsibilities, except for the Connecticut State University (CSU) projects, in which case the A/E shall deliver a complete system of raceway and cabling installation to the CSU system. Such design and installation shall be performed under the supervision of DOIT or the Agency's and DPW's On-Call Telecommunication Consultant". Cabling design and installation shall conform to the requirements of EIA/TIA 568-A "Telecommunications Cabling Standards". Include cabling requirements under a separate technical specification section, (i.e., **Section 17000 – Telecommunications Cabling Distribution Systems**).

DOIT/Consultant

Evaluate telecommunications needs with state agencies and DPW-Technical Services Unit.

Establish design criteria to accommodate agency needs.

Present design criteria to the architect/engineer for implementation into the contract documents.

Provide technical assist to the architects/engineers during the planning and early phases of the design.

Prepare bid documents for wiring, voice and data systems including wiring types, installation, terminations, and testing. Specify voice and data equipment.

Provide quality assurance during construction, witness-testing procedures and approve installations for voice and data systems.

2.4.8. Cont.
DPW -Technical Services Unit

Review A/E submissions during design stages.

Provide limited support services to DOIT and the Agency as needed.

Agency

Compile agency telecommunications needs. Coordinate with the DPW-Electrical Engineering and OIT to establish the scope of the telecommunication system.

- Assist A/E and DOIT/Consultant in the location of voice and data outlets for the user stations.
- Participate in inspections with DOIT/Consultant.
- Participate in the system acceptance procedures.

2.4.9 Demolition Code

This must be coordinated with the local municipal Agencies.

2.4.10 Hazardous Materials

- A. The consultant's work product shall not require or suggest the use of hazardous materials or products containing hazardous materials. If hazardous material cannot be avoided, i.e., there is no substitute product, then the product must be identified as containing hazardous material and the State must be notified of that fact in writing.

All products and systems supplied to the State as a result of a purchase by D.P.W. will be certified that, to the best of the supplier's knowledge, there are no materials that are classified as hazardous materials being used within the assembly. Hazardous materials include, but are not limited to, products such as asbestos, lead and other materials that have proven to cause a health risk or are defined as hazardous under any state, federal, or local law, rule or regulation affecting health and human safety or the environment.

- B. Within the Manual there are requirements that mandate that any hazardous materials be removed or isolated in accordance with State procedures. Furthermore, any renovation of an existing structure should have a Report prepared and attached to the contract documents informing all persons electing to do work with the State are aware of the presence of the material and to take standard industry care of the matter.

2.4.11 Building Components

Division 3 Concrete

All Rebar installation will be epoxy coated

All wire mesh, expanded metal, chairs shall be hot dipped galvanized or be plastic coated

Floor surfaces may vary from a true plane no more that 1/8" in 10 feet.

Division 4 Masonry

Brick Veneer

Steel stud backup for brick veneer is not favored by the State. This method of construction has not proved its durability to the satisfaction of accepted authorities.

Ties, Anchors, Reinforcement

The use of corrugated sheet metal ties and anchors is strongly discouraged. Fixed and adjustable ties and anchors made of 3/16" diameter steel are recommended instead. Beam and column anchors shall be at least 1/4" thick by 1" wide. All of these products shall be hot dip galvanized after fabrication. Use only galvanized products, both exterior and interior. Anchors for stone veneer shall be the thickest, standard products available also conforming to the specifications of the stone fabricator unless stainless steel anchors are required. Horizontal reinforcing for multi-wythe walls shall be ladder or truss type made of not less than 9 gauge steel side and cross rods and galvanized as above.

Stone Veneer

Stone for this purpose shall be 1" thick or thicker if recommended by the stone fabricator for a given application. Provide details of all supports, anchors and joints at other materials for DPW review. Anchors fabricated from 304 alloy stainless steel, brass or bronze.

Cleaning/Restoration

Specify clean water and bristle brushes for cleaning new brickwork. If more aggressive measures are needed, the architect must be first approved them.

Cleaning agents and methods for cleaning existing brick shall be selected by a DPW - accepted authority and then tested on an inconspicuous part of the structure in the presence of DPW representatives. Modify this requirement to suit the interests of other agencies if the structure is, for instance, on The National Register of Historic Buildings. Never specify sandblasting of existing brick.

The existing mortar of a historic masonry building must be analyzed so that new mortar for restoration work can be matched to the original.

Contact the Connecticut Historical Commission in Hartford (566-3005) for procedure.

2.4.11 Cont.

General

In double wythe masonry walls, provide a minimum air space of 1-1/2". The cavity is to be kept clean to permit efficient evacuation of moisture via the weep holes.

Provide open vertical joint weeps immediately above flashing at a frequency of 16" O.C.

Start masonry not less than 6" above finish grade.

Provide vertical and horizontal expansion joints as required and recommended by the Masonry Institute.

Provide open mesh type mortar barrier in all masonry cavity walls to prevent mortar droppings from blocking weep and vent holes in the wall. Install the mesh in the cavity space on top of the through-wall flashing adjacent to the vertical joint weeps at the base of the walls, lintels or other similar locations where cavity weeps or vents are required in masonry walls.

Dampproofing/Waterproofing

Coat the face of the CMU backup with an asphalt emulsion in strict accordance with the manufacturer's recommendations. When dry, fully coat the back of a 2-inch thick foam type insulation with the same emulsion and adhere it to the face of the CMU. (If a foam type insulation is used on a concrete wall at backfill below finish grade, dabs of adhesive can be used on the insulation material for adhesion after the coating of the concrete has dried.)

Cementitious type dampproofing can be substituted for asphalt type, in which case, use different insulation system than that indicated in "A " above.

Division 5 Metals

Lintels and Railings

Hot-dip galvanize steel lintels and exterior railings after fabrication. Specify that lintel surfaces left exposed after installation and railings (interior and exterior) receive one primer and two finish coats of exterior grade enamel paint.

Do not use ferrous metals in toilet rooms, kitchens, natatoriums or other high humidity areas unless they are hot dip galvanized after fabrication. Alternatively use aluminum or type 302 or 304 stainless steel as suited to the given application.

Handrails

Acceptable materials are stainless steel, Alum. Or Color Galvanized with no open ends.

Expansion Joints

Interior floor covers shall be metal having no rubberized cork, urethane, vinyl or other joint filler. The vase member shall be designed to set the cover plate flush with the finish floor and have secure anchorage

2.4.11 Cont.

Division 6 Wood and Plastic

Rough Carpentry

Preservative treatment for all wood in damp areas or in contact with earth, concrete, masonry, plaster or roofing

Architectural Woodwork

Specify architectural woodwork to be shop fabricated in accordance with The Architectural Woodwork Institute Premium Grade standards except for minor items or assemblies where a lower standard will provide an acceptable appearance for the given application.

Unless there is a compelling reason to do otherwise, specify cabinets (casework) to be fully shop finished according to an A.W.I. standard. It is recommended that plastic laminate clad casework have the interior surfaces, including shelves, finished with laminate of the types suited to the applications.

Specify every item of cabinet hardware by name, number and manufacturer. Specify finish.

Roof Sheathing

Do not use fire-retardant treated plywood as roof sheathing under asphalt or wood shingles. It has been discovered that when the temperature exceeds 120 degrees (F), the material delaminates and is no longer capable of supporting the assumed loads.

Division 7 Thermal and Moisture Protection

Waterproofing/Dampproofing

Below grade foundation walls shall be dampproofed and or waterproofed to meet design requirements and or site conditions.

Roofing Requirements

Roof Types for Various Pitches:

0" to 1/2"/12" 4-ply tar and gravel, modified bitumen, 60 mil. or reinforced 45 mil. single ply membranes.

1/2" to 1"/12" 4-ply asphalt and gravel, modified bitumen or single ply membrane as above.

1" to 4"/12" metal interlock roof panels, modified bitumen or single ply membrane as above.

4"/12" and greater shingles, slate, tile, metal interlock or single ply membrane when approved by manufacturer.

2.4.11 Cont.

Warranties:

Five (5) years for material and workmanship on roofs less than 5,000 SF and for re-roofing projects. Include base flashing and roof insulation in warranty.

2.4.16 Cont.

Patching of existing roofs will be covered by the general contract one-year warranty.

Refer to General Conditions of the Contract - General Requirements and/or Supplementary General Conditions for the warranty requirements applicable to other roofing types.

Clearances:

Locate and place A/C units, fans, skylights, hatches and other roof-mounted items so that they may receive at least 8" high base flashing. Provide at least 24" clearance between the item and adjacent construction unless the design dictates otherwise and at least 12" under the item.

Do not place ducts or conduits directly on roofing. Support these items above the roof in conformance with details and specifications by the roofing materials' manufacturer.

Miscellaneous:

Limit penetrations to the least possible number.

Provide walkway pads to roof-mounted equipment that requires servicing. Use pad approved by the roofing materials' manufacturer.

If an IRMA type roof is used, either attach the insulation to the supporting construction or hold it in place with manufacturer-approved materials/methods to prevent the insulation from floating.

Polyvinyl chloride flashings are not acceptable

Roofing System Justification:

As part of the Schematic Design phase, the A/E shall submit a brief written description of the roofing type proposed for the project supported by reasons based on the following considerations:

Structure	Deck Type(s)	Anchoring	Insulation
Roof Load(s)	Existing Conditions	Guarantees	Cost
Slope(s)	Application	Reflectivity (color)	Flashings
Penetrations	Drainage		

Exposure: Local Atmosphere, Grease, Oil, Exhausts, Chemicals
Fire safety: Torch Application

2.4.11 Cont.

Problems:

Sufficient attention has not been given to the problems associated with the re-roofing of an occupied building. Fumes given off by heated bitumen is the most common problem. It is recommended that all parties involved in the roofing of an occupied building confer before starting the work to provide open channels of communication.

Suggested remedies are: do the work when the building is unoccupied; keeping kettles covered; turning off fresh air intakes; keeping doors and windows closed.

Include a statement in the roofing section regarding end-of-day roofing conditions; i.e., treatment of edges of insulation and roofing.

Removal of Asbestos Materials:

If an existing roof that is to be replaced or repaired has been identified by DPW to contain asbestos materials, insert "Asbestos-Containing Roofing Material Removal" (refer to appendices) into A/E specifications.

The section may be inserted directly into the specification with project and section number added or included verbatim in the A/E's own specification format.

Exterior Insulation Finish Systems (EIFS)

Do not use any of these systems "DryVit" and "STO", for example, where this material would be within reach of vandals. This effectively limits their use to building soffits.

Concealed Gutters

Do not use concealed gutters if at all possible. If used to preserve design integrity with adjacent buildings, fit the gutters with scuppers to discharge rain water outboard.

Division 8 Doors, Windows and Glass

Hollow Metal Doors and Frames

In general, it is required that frames be SUAW (set up and welded). For existing openings, frames shall be KD (knock down) with mitered corners and positive attachment devices to produce hairline uniform joints.

Fabricate exterior doors with 16 gauge, galvanized steel faces, and frames with 14 gauge galvanized steel. The door surface shall be perfectly flat, showing no oil canning or weld spots. Interior doors shall be 18 gauge with 16 gauge frames. These gauge sizes do not apply to Department of Correction (DOC) projects.

Refer to DOC for requirements for security door testing.

2.4.11Cont.

Wood and Mineral Core Fire Doors

Exterior Wood doors are not recommended unless they are a Historic replacement.

The construction components in wood and mineral core fire door shall not be less than following requirements:

Top and bottom rails shall be not less than 5" wide solid wood.

Styles shall be triple plywood to provide secure anchorage for screw fasteners.

Lock blocks shall be not less than 5" x 12" solid wood.

Finish Hardware

In general, hardware for renovated buildings and for additions to existing buildings shall be the same as used in the existing building, including finish. This applies to locksets, exit bolts and closers so that keying shall be consistent, among other things. Order not less than 1-1/2 pair of hinges per door leaf up to 7'0" high and one additional for each additional 30" in height or fraction thereof. Use only commercial grade hardware.

Require that closers and other surface mounted hardware on mineral core doors be though-bolted, or specify that these doors have 5 1/2" top and bottom rails and lock blocks.

Do not use in-floor closers or concealed-in-head closers unless there are compelling reasons for there use.

For jail or prisons, specify detention hardware (locks for cells, for example) with the cells and related items in Division 13.

Windows

Windows shall provide a reasonable measure of energy efficiency that is, at minimum, consistent with the required "U" values of the particular building. Use thermally broken metal windows with insulating glass. Use tinted and Low-E glass only where their use can be justified.

Division 9 FINISHES

General

Do not use single layer gypsum board on partitions in areas where vandalism or other abuse could be expected. Select materials for these areas that will not fail due to the expected level of abuse. Use materials, if available, that offers a multi-year warranty against abuse. "Failure" means change to the degree that the material can no longer serve its intended function.

2.4.11 Cont.

Walls of toilet rooms and rooms which house water-using fixtures in institutions and other high-use facilities must be designed with the assumption that there will be water leaks. Do not use moisture-resistant gypsum board. Instead, use cement based backer board ("Durock", for example) as the substrate. The use of steel studs should be discouraged; experience has shown that they readily deteriorate in the presence of moisture starting where the stud is cut or where screws penetrate their zinc coating. Alternate support could be wood studs, codes permitting. Strong consideration shall be given to using concrete masonry units with a ceramic tile or two-part epoxy finish.

Use hard surface floors, such as ceramic tile or two-part epoxy, and marble thresholds, at toilets and bathrooms.

Specify a minimum 3-coat paint application. Select paints suited to the given substrate. Also, specify dry film thickness for each coat.

Commercial Carpet Guidelines

Direct Glue Down Application:

(a) Carpet Type.

Tufted:	100% C-F nylon, level loop with permanent anti-static and soil hiding features
Face Yarn:	Antron III, also IV, Zeffron or Ultron
Yarn Ply:	3 (min.)
Face Yarn Weight:	28 oz./sq.yd.
Total Weight:	67 oz./sq.yd.
Dye Method:	Yarn
Backing:	Primary-Synthetic Secondary-Jute or woven Synthetic
	Recommended Traffic Designation: Heavy

(b) Installation: Cement to the floor, following an approved seaming diagram submitted by the carpet contractor, with an adhesive recommended by the carpet manufacturer. Carpet pile direction shall be consistent, and installed in the largest possible lengths and widths to minimize the number of cross and length seams.

(c) Seams: Seams should not be perpendicular to openings. Seams occurring at doors, parallel to doors, should be centered under doors. Cross seams should be made with a waterproof contact adhesive. All workmanship and the entire installation must meet the standards prescribed by the manufacturer and the carpet and rug institutes recommended standards and procedures.

Tackless Application With Cushion

(a) Carpet Type. Reference (Para. 9.1.5.1.)

(b) Cushion: Carpet cushion shall consist of hair and jute. No seconds or imperfections will be acceptable. Hair and fiber cushion shall be of all new selected, clean washed cattle hair and fiber, moth proofed. Weight not less than 40 ounces per square yard, and shall be Crown "Stanton" or approved equal.

(c) Installation: Install following an approved seaming diagram submitted by the carpet contractor over a layer of cushion. Use tackless strips around room perimeter. Spot-cement cushion to floor to prevent rolling and shifting. Cushion seaming should be laid out at right angles to carpet seams.

2.4.11 Cont.

(d) Seams: Seaming is the same as in (Para.9 a-3) except all parallel seams shall be hot-melt taped using Bond, Taylor, Roberts or equal, applied as recommended by the carpet manufacturer.

Requirements of Regulatory Agencies

(a) Flammability: Carpeting shall have an average critical radiant flux of greater than or equal to 0.45 watts per square centimeter N.F.P.A. 253, and specific optical density of 450 or less, N.F.P.A. 258. Manufacturers' test reports encompassing fire hazard classification, sound absorption, and static control qualities shall be submitted to the State of Connecticut before installation.

Guarantees

(a) The carpet contractor shall re-stretch carpet, repair seams, joints and edges, if required, once after the original installation is completed at no additional charge to the State of Connecticut. The exact time for this work shall be left to the discretion of the using State Agency.

(b) The carpet contractor shall submit a 3-year written guarantee assuring the State of Connecticut that the carpet will remain tight and free of wrinkles; and to correct any other condition which may appear due to faulty installation procedures.

(c) The carpet contractor shall submit a copy of the carpet manufacturers standard minimum 5-year wear, color fastness and color uniformity guarantee.

Division 10 Specialties

Division 11 Equipment

Division 12 Furnishing

Division 13 Special Construction

Division 14 Conveying Systems

Elevators

The State Elevator Inspector has noted in the past, Fire Protective Spray on coatings have had a flaking problem clogging elevator machinery equipment causing elevator malfunctions. When using spray on fireproofing, be aware of past performance problems. Recommend other alternatives in the elevator machine rooms.

2.4.11 Cont.

Division 15 Mechanical – Fire Protection

General

Sprinkler Systems, Standpipe Systems, Fire Pumps and Water Supplies shall be designed in accordance with the State Building Code and Connecticut Life Safety Code.

Whether the Engineer provides only a performance specification or a detailed fire protection system drawings, the following design requirements must be included in the specifications.

All of the information outlined in NFPA 13 (1991) Chapter 6-1, 6-2 and 6-3 shall be provided on the shop drawings.

If early suppression fast response sprinkler heads are used, the information on roof slope should be stated on the shop drawings.

Separate hydraulic calculations shall be provided for areas such as shops, kitchen and mechanical rooms, which generally have a higher design density than the remainder of the facility.

Walk in freezers and coolers shall be provided with dry pendant sprinkler heads.

A minimum of an 8-PSI safety cushion shall be provided, unless this will result in having to install a fire pump.

Mechanical Rooms shall be designed for Ordinary Hazard Group 2.

In general, incidental storage areas should be designed for Ordinary Hazard Group 2. Incidental storage is situations such as the storage of kitchen supplies or, office supplies.

Elevator shafts shall be sprinkled in conformance with NFPA 13 (1991) Chapter 4-4.1.7.2.

Electrical rooms shall be protected in conformance with NFPA 13 (1991) Chapter 4-4.1.7.12.

Areas such as woodworking and machine shops should be designed for Ordinary Hazard Group 2, in conformance with NFPA 13 (1991).

Inspectors test outlets, main drains and floor control test assembly drains, shall discharge directly to the outside.

Sprinkler protection shall be provided for the area underneath overhead doors (when the door is in the open position); in addition to ceiling sprinkler protection.

Earthquake bracing shall be provided as required by the State Building Code. NFPA 13 guidelines shall be followed. The shop drawings shall show proper arrows, reflecting location and type of bracing.

All sprinkler, fire pump, smoke detector and other fire alarms should transmit either to a central or remote station or to a 24 hour constantly attended station (i.e., guard station).

2.4.11 Cont.

Sprinkler system alarms shall include valve tamper, water flow, low temperature, and for dry pipe systems low air pressure. Alarm, at a minimum should be zoned per floor and large floors may be subdivided into more than one zone.

NFPA 20 (1991) Chapter 9-4 describes and lists alarms to be provided for engine drive controllers.

Shop drawings submitted for approval shall include complete hydraulic calculations and shall be stamped by a professional engineer licensed in the State of Connecticut.

Detailed information shall be given, on the engineer's contract drawings, in reference to:

Operations such as spray painting, shops and storage.

Storage information should include a description of products stored, packaging material for product, storage arrangement (i.e., racks, palletized, etc.), storage height, aisle width, clearance from top of storage to underside of roof or ceiling, whether or not encapsulated. This includes flammable materials.

If there is a pre-action system interconnected with smoke detectors, the details of this arrangement shall be provided in the contract of how the systems are interconnected; how the systems operates and the sequence of operation.

Standpipes and combination sprinkler/standpipes shall be designed to this manual, NFPA-13 and 14; BOCA 1012.0, 1013, 1014 and 1015.0 & Chpt 9 Boca Nat. Bldg Code.

The State Insurance Carrier (SIC) requires two (2) weeks' prior notice of a sprinkler system acceptance test.

Division 16 Electrical - Voice and Data Raceway Distribution

General

This Section of the Specifications shall be used by the Engineer to describe a complete raceway distribution system, for the Voice and Data communications systems.

Under this Section of the specifications, the Engineer shall specify:

The Telephone Service conduits from the Utility, or Site Distribution, to the Building Main Telephone (BMDF) Room. (NOTE: A minimum of one 4-inch active and one 4-inch spare conduit shall be specified for each project).

Vertical and Horizontal raceways between the Main Telephone Room (BMDF) and the Intermediate Phone Rooms (IDF's). (A minimum of two 4-inch conduits shall be specified).

Vertical and Horizontal raceways between the IDF rooms on each floor. (A minimum of two 4-inch conduits, or sleeves shall be specified).

Horizontal raceway distribution between the IDF's, and the workstations on that floor. (See Par. 16.03 for additional input).

All raceway fittings, outlet boxes, junction boxes, pull boxes, etc. required for the voice and data raceway system. Standard size outlet box shall be 4" x 4" with 1" conduit raceway and pull string.

2.4.11 Cont.

All Grounding and Bonding required by NEC Code.

All fire sealant is required to fill-in wall and floor conduit penetrations.

All Electrical & Environmental requirements for the BMDF and IDF rooms, as outlined in the State Telecommunications Wiring Standard, and directed by DPW Telecommunications.

Identify whether voice/data wiring and terminations are part of this contract or not.

Voice/data communication systems (raceways and/or wiring) shall be designed per EIA/TIA Industry standards.

Site Distribution

Site utility raceway distribution for the Telephone and Data systems shall be the responsibility of the A/E. (Provide details.)

Telephone and Data duct-banks, manholes etc. shall be coordinated with all other utilities (i.e. Electric, CATV etc.).

Installation of duct-banks, manholes, etc. shall be specified under division 2 and 3 of the contract specifications.

Station Raceway Distribution

Raceway distribution between the workstations and the IDF's may be provided in one of the following methods:

Ceiling Distribution

- (a) Raised Floor System
- (b) Under-floor Ducts
- (c) Exposed and surface mounted raceways
- (d) Cellular Floor System

Unless otherwise directed by DPW, the Ceiling Distribution system, utilizing raceways, cable trays or similar cable management methods, shall be the preferred State method.

Ceiling Distribution system shall consist of:

Conduit stub-ups from outlet boxes to accessible ceilings.

Home-run conduit from outlet boxes to IDF's in Non-accessible ceilings

Surface mounted raceways, where ceilings are not accessible and where approved by DPW.

Where stub-ups are provided above the ceiling, grouping of station cables shall be placed in cable-trays, or wire-ways, back to IDF/BMDF. Engineer shall design appropriate raceway system to facilitate good cable management practices.

2.4.12 SINGLE SOURCE SPECIFICATIONS

The Department reviews specifications by consultants and prepares others as part of its in-house design work. In many cases, a client Agency will ask for a specific product because of favorable previous experience or for the sake of uniformity of appearance or service. Consultants too, will occasionally state

that a given product is the only one worth specifying for several different and compelling reasons. There are, of course, many exceptions and variations to the above. And there are good reasons why the Department should consider the exclusive use of a given product.

Below is a review of an existing procedure for adjudicating single source specifications and what exceptions may or may not apply.

1. An Agency may ask the A/E Consultant to specify a particular product for the reasons given above. The A/E, however, is obligated by departmental procedure to either specify a minimum of three, reasonably equal products or use a performance specification that does not include a manufacturer's name. If the Agency insists on a restricted specification, it may (or shall) make written request to the Chairman Single Source Committee, Department of Public Works, Room 463, 165 Capitol Avenue, Hartford, CT. 06106. The Chairman is part of a three-person committee and the sole entity that can give permission for a sole source specification. The DPW Chief Architect and Chief Engineer or their delegate is also on the committee. It is the DPW team representative's responsibility to be sure that the request to the Single Source Committee is fully supported by the reason for it and its cost, but not his responsibility to create or prepare the document. A poorly supported request will fail and waste time and money.
2. Of course, exceptions exist. Permission has been granted for single source for several products. A request for one of these products or a similar one may be granted in the interests of time or convenience. But it cannot be assumed that permission is automatically granted. While various industries have established acceptable standards, they should be reviewed and studied by the Single Source Committee.
3. In smaller, add-on projects, it is accepted practice to use the same brand of builders hardware and keying system as the existing. In large, add-on projects this practice is, however, cloudy. Locking mechanisms (cylinders) are interchangeable within practically all brands of lock assemblies. This suggests that lock assemblies for a large add-on project could be competitively bid while the cylinders would be restricted to the same brand as the existing. The simple logic of this scheme is thwarted by the industry practice of one manufacturer honoring another's installation and not offering a bid where the other manufacturer's product is already in use. This practice, as far as can be determined, is not formalized in writing.
4. Another exception to multi-source bidding is found in smaller, add-on or renovation projects where only a few items such as doors, windows, furniture and casework are needed. In these cases, there is usually a close relationship between new and old and simple logic demands uniformity of appearance among other things. It is recommended that if any item in a project of the subject type does not cost more than \$10,000.00, it be permitted to be bid on a proprietary basis.

SPECIFYING SPECIFIC OR PROPRIETARY PRODUCTS

In PART 2 – Products of the three part Technical Specifications, name not less than three (3) manufacturers for each product. Do not use " or approved equal".

2.4.13 GENERAL DRAWING INFORMATION

STANDARD SIZES

1. Final drawings for all projects shall be one of the following sizes: 11" x 17", 24" x 36" or 30" x 42". The dimensions refer to the outside edge or cut line. Use only one sheet size for each project. Any requirement to modify these dimensions must be addressed early in the project and be approved by the DPW-Project Manager and the DPW-Supervising Project Manager.
2. Drawings of each submission phase should conform to the above standard sizes. Certain topographical plans, plot surveys and engineering projects that include large areas may require larger sheet sizes. The Department of Public Works must approve all exceptions.
3. Tracings shall be Mylar of printable quality as judged by the DPW.
4. Half-Size Drawings for Construction: DPW may require the drawings to be reduced to 1/2 scale for bidding and construction purposes on major projects. Original drawings (Tracings) will be full size. DPW will obtain the half-size drawings for bid and construction phases. Half size drawings will be authorized by DPW.
5. Drafting Standards shall be as follows:
 - a. Graphic scales, as established by DPW on each sheet or detail.
 - b. Minimum pen line thickness of O or .35mm and the lead pencil equivalent.
 - c. Minimum lettering height of 1/8".
 - d. Do not Poche or apply film to the back of the tracing.
 - e. Minimum scale: 1/8"=1'-0" for architectural. Refer also to "Boundary and Topographical Survey".
6. The DPW title sheet in CADD format is available to the A/E, on request. The A/E must provide a blank formatted 3 1/2", 1.44-MB diskette to obtain a copy of data.
7. List of items available on diskette:
 - a. DPW Title Sheet
 - b. Sample Title Block
 - c. Agency/DPW Approval Block.
 - d. General Requirements

2.1 (Cont.) CADD STANDARDS

1. All drawings at the Tracing and Master (T&M) phase prepared for DPW projects must be submitted on 3 1/2", 1.44 MB Diskettes or CDs in addition to the conventional Mylar originals.
2. Software used to produce CADD drawings should be compatible with AutoCAD, Release 12 or latest release.
3. The contents of each diskette/CD will be identified on labels securely attached to each diskette/CD cover, not the diskette/CD sleeve.
4. CADD drawing numbers: The title block on each drawing shall contain the project number and sheet number.

5. After completion of construction, all revision changes, additions, as-built conditions and any other comments pertinent to the project must be included on the CADD diskettes/CD before the final payment is approved.

6. DPW recommends use of the AIA short or long layering guidelines as a standard layering format.

7. DPW recommends that font selection be limited to those supplied with the basic AutoCAD software package. Alternate fonts must be approved by the DPW. If an alternate font is used the font file must be supplied along with the project files.

Additional information about the drawing format may be obtained by contacting the Department of Public Works. Telephone (860) 713-5630.

2.5.2. SCHEMATIC DESIGN PHASE

SCHEMATIC DESIGN CHECKLIST (Preliminary Design) 35% Completion

1. General
 - a. Program for the principal areas.
 - b. Regional area characteristics, site features: natural and man-made.
 - c. Vehicular and pedestrian circulation.
 - d. Agency needs.
 - e. Refer also to "Specifications" section in the Consultants Manual.
 - f. Complete the "Checklist for Permits and Approvals"
 - g. Conditions to be included in division general in a draft form.
 - h. Design concepts for the mitigation measures described in the environmental document.
2. Architectural
 - a. Floor Plans (1/16", 1/8", 1/4" scale or as required), must indicate overall dimensions and square feet area of each floor.
 - b. Elevations (sufficient to delineate the design).
 - c. Sections (sufficient to delineate the design), include large scale sketches, as required, to illustrate the design.
 - d. Approximate grade elevations.
 - e. Floor-to-floor dimensions.
 - f. Fire classification (ref. BOCA, and "Building Information Form").
 - g. Outline specifications, & Supplementary General Conditions.
 - h. Pedestrian access and circulation.
 - i. Parking and vehicular circulation.
 - j. Energy conservation measures.
 - k. Handicapped accessibility
 - l. Study model (large projects & when requested).
 - m. Trash removal/recycling provisions
 - n. Show Telecommunication, Mechanical and Electrical rooms.
3. Civil
 - a. Site or plot plan with sufficient contour lines or spot elevations to describe existing conditions and the footprint of the proposed building/s, orientated in the same direction as all other project drawings. Show past outline of foundation if previous demolition.
 - b. Locations of all existing utilities as per survey.
 - c. Comply with "Subsurface Investigation" requirements, (boring logs on plans, and sewage disposal system investigations where applicable).
 - d. Method of disposal of storm water and sewage.
 - e. Source of water supply.
 - f. Location of roads, parking areas, existing buildings.
 - g. Type of subsoil, adjacent property problems if any.
 - h. Survey to comply with "Boundary and Topographic Survey"
 - i. A copy of the original survey is to be included either as a base for the proposed work or as a separate drawing.
 - j. Proposed new underground utilities shall be shown.
 - k. Calculation/location of required parking spaces for disabled persons.
 - l. Method of Soil Erosion and Sediment Control.
 - m. Location of all wetlands and watercourses.

2.5.2 Cont.

4. Structural

- a. Proposed type of structural system with relation to indicated use-group and construction classification and design loads.
- b. Any special or unusual uses or conditions anticipated.
- c. Additions, alterations or repairs physically separated from existing buildings or resolved by options indicated in item 10 of the Forward.
- d. All live loads and concentrated loads, including values of components in formulas for snow, wind and seismic forces.

5. Mechanical

- a. Prepare Life Cycle Cost Analysis determination form with heating and cooling "Block" loads.
- b. Floor Plans must show locations for equipment rooms, boiler rooms, and main duct shafts. Show locations for main duct and piping runs. Also, show water, gas, storm and sanitary entry points with inverts. Use of felt marker on architectural schematic drawings is acceptable.
- c. Verification from utility companies that peak anticipated demand (pressure and volume) for gas and water can be provided.
- d. Indicate flow diagrams for air and water systems, including major components.
- e. Identify all existing major equipment or systems to be reused as part of renovation work.
- f. Outline specifications: use CSI Section numbers and identify basic materials and equipment.
- g. Supplemental narrative that describe the mechanical, and plumbing systems.
- h. Indicate the type of temperature control system to be used.
- i. Indicate the minimum number of required plumbing facilities, and any special plumbing.

6. Electrical

- a. Initial contact with electrical utility company (NU or UI) regarding source of power, type of distribution, fees for connections, etc. Refer also to Utility Connections/Easements.
- b. Outline new Energy Savings Systems and/or upgrades. See Energy Evaluations, also chapters 5 and 6 of ASHRAE 90.1-1989.
- c. Identify proposed site and/or building voltage distribution, i.e., 4160, 277/480, 120/208) and anticipated loads.
- d. Identify types of lighting, both interior and exterior, including light levels, types of lamps, ballasts, etc.
- e. Identify special systems, i.e., emergency lighting, fire alarm, standby power generation, paging, CATV, CCTV, security, etc.
- f. Identify existing systems and major equipment to be re-used in renovation work.
- g. Identify main switchgear room and auxiliary electrical rooms on architectural floor plans.
- h. Submit outline specifications with CSI section numbers, and identify basic materials, equipment and systems.
- i. Provide telecommunications requirements as in item 7.
- j. Consider use of peak load shave and cogeneration with standby generator.
- k. Add special energy savings lighting controls where practical.
- l. Renovation work: verify scope of work with DPW and agency. Visit site to confirm scope.

2.5..2 Cont.

7. Telecommunications

- a. Identify source of incoming Telephone Service, i.e., SNET, agency, overhead, underground, etc. See Telecommunications.
- b. Identify location of BMDF and IDF rooms on architectural drawings.
- c. Identify proposed method of horizontal and vertical raceway and cable distribution for voice and data communication systems.
- d. Identify whether installation of voice and data wiring is or is not part of the contract.

8. Budget Estimate

- a. The program for design shall be prepared that is within the approved budget amount. If the design appears not to be within the budget amount, the A/E shall suggest alternative approaches to reduce the cost without major revisions to the program.
- b. Square or cubic unit cost estimates are acceptable at the schematic phase of the design.

9. Code

- a. Complete the "Building Information Form" and include information on drawings.
- b. Submit "BOCA Plan Review Record" worksheets for buildings that exceed the threshold limit only or as directed by DPW. See "Code Compliance" for a definition of "threshold limit".
- c. Submit occupant/plumbing calculations from Article 12 BOCA Plumbing Code.
- d. The plans must indicate all rooms/spaces that has an occupant load of 50 or more persons. The total occupant load for each floor shall be indicated on the floor plans. Separate plans with occupancy loads may be included, if the main floor plan drawings are complex.

10. Historic Buildings

- a. Refer to "Guidelines for Rehabilitating Historic Buildings", Consultants Procedure Manual.

2.5.3. DESIGN DEVELOPMENT PHASE

DESIGN DEVELOPMENT CHECKLIST - 60% Complete

All design review items from the Schematic Design checklist, in addition to the items as follows:

1. General
 - a. Submit an updated "Permits and Approval Checklist".
 - b. Submit all required as defined above applications for permit.
2. Architectural
 - a. Title sheet with small plan to show project location related to adjacent roads and streets and other structures.
 - b. Plot plan with project limit lines and north arrow.
 - c. Floor and roof plans at 1/8" scale (min.), fully dimensioned, and indicate the dimensions of all egress components, doors, stairs, aisles, passages, etc.
 - d. Building sections shall be as required to illustrate all construction methods.
 - e. Elevations: identify the materials and show dimensions and grades.
 - f. Reflected ceiling plans; typical and special details.
 - g. Door and Finish schedules.
 - h. Layout of equipment and furniture.
 - i. Indicate rated walls on floor plans and include legend.
 - j. Specification; translate the outline into the three part, CSI format.
 - k. Supplementary General Conditions: Make first adaptation of this document to the project; include agency operational constraints and site constraints on the contractors operations and activities.
 - l. Prepare an accurate cost estimate based on the design development documents.
 - m. All architectural and engineering decisions are to be finalized by the conclusion of the DD phase.
 - n. Framed color perspective of project; include project name and number A/E name.
 - o. A/E to provide DPW-Project Manager with the name of firm selected to prepare architectural rendering.
 - p. A/E or architectural renderer to submit 8"x10" samples of the work to DPW for review and comment. The samples shall demonstrate the technique, quality and media of the proposed rendering.
 - q. Location, sizes, and finish schedule of Mechanical, Electrical and Telecommunication rooms.
3. Civil
 - a. Exact location and elevation of building(s) shown.
 - b. Locations of subsurface investigations related to established existing features and subsurface investigations information.
 - c. Show finished grade contours, benchmark and a graphic legend. Also verify conditions at the site.
 - d. Locate utilities as to elevation, size and direction.
 - e. Show roads, parking areas and site improvements, with sections.
 - f. Comply with State Department of Health Services written criteria.
 - g. Show existing and proposed planting.
 - h. Show existing and proposed surface treatment and drainage.
 - i. Include soil erosion and sediment control/storm water pollution control plan, text, and details, and a general permit registration or individual permit, if required.
 - j. Proposed utility hook-ups and any easements, if needed.
 - k. General site work detail.

2.5.3 Cont.

4. Structural

- a. Basement - foundation plans including foundation and wall design.
- b. Floor and framing plans.
- c. Sizes of typical members/ types of construction.
- d. Fireproofing.
- e. Indicate bottom of footing, and top of steel, elevations based upon site survey datum.
- f. Seismic criteria and information per BOCA.
- g. Footing schedule and basic column framing plan.

5. Mechanical

- a. Revise life cycle cost analysis to reflect final heating/cooling loads and cost estimate. See also Energy Evaluations, Energy Conscious Construction (NU), or Energy Blueprint (UI).
- b. Floor Plans drawn to 1/8" or 1/4" scale.
- c. Complete pipe and duct layout with flow arrows on pipes and sizes for main ducts.
- d. Indicate smoke walls and show fire dampers and smoke dampers. Show exterior louvers and shutters.
- e. Boiler and fan rooms drawn to 1/4":1'0" min. scale. Fan room ductwork drawn "two Line". Show service areas around equipment.
- f. All equipment, including equipment furnished by others but connected under Division 15, should be shown.
- g. HVAC air and water flow diagrams developed to include flow quantities and motor horsepower.
- h. Preliminary schedule and detail sheets. Schedules and details to be "Blocked out" and titled.
- i. Roof Plan: show location and weight for all roof mounted equipment. Also show all plumbing vents and other roof penetrations.
- j. Specifications in final format. All sections except equipment and temperature control sequence of operation, to be complete. Insert title sheets of sections omitted but are to be included.
- k. Fire Protection section of specifications shall include hydrant "three point" flow test data. Ref. also to "Sprinkler System and Water Supply".
- l. Sprinkler section of specifications shall include pertinent information from "Building Component", Section 15300.
- m. The plans and specifications should be sufficiently developed to prepare a reliable cost estimate.
- n. Include in the contract a provision for computer software and hardware in all equipment, components and systems to be compliant with year 2000 (Y2K), and that the complete systems be tested prior to acceptance by the owner.

6. Electrical

- a. Site utility details for electric, telephone, CATV, Fire Alarm, Security, Data links and any other specialized electrical or electronic ties. Review design scope with Architect, DPW and Agency. Verify conditions on site. (List contact engineer and telephone number of each utility. Submit copy of Utility correspondence).
- b. Power Distribution plan, to include a one-line diagram of incoming service, switchboards, transformers, panelboards, motor control centers, and other major equipment. Identify equipment, conduit and conductor sizes.
- c. Lighting, power and system floor plans; show light fixtures, receptacles, motors, voice/data outlets, and conduit and conductor sizes.
- d. Detail of new or upgraded emergency and life safety systems.
- e. Detail standby generation system.

2.5.3 Cont.

- f. Indicate location, feeds, ratings and details of exterior/area lighting. Include a fixture and/or equipment schedules.
- g. Fire alarm system: provide riser diagram and equipment locations. Include interface details with existing alarm system(s) and city or other connected lines. Visit site and submit checklist.
- h. Provide equipment locations and riser diagrams for paging, CATV, CCTV, Security, voice/data, and other special systems.
- i. Indicate all power distribution equipment on floor plans. Coordinate with other trades.
- j. Provide specifications using CSI section numbers. Identify all equipment and systems used.
- k. Provide telecommunications system needs as described in B.9.)
- l. Identify special requirements for computer rooms, data equipment, isolated grounds, UPS systems, oversized neutrals, special transformers, isolation panels, computer floor grounding, etc.
- m. Provide connected loads for all circuits indicated on panelboard schedule.
- n. Indicate design foot-candle levels on the drawings.
- o. Renovation work: prepare demolition drawings including confirmation and coordination of existing conditions at site. Use of "as-built" drawings without field verification will not be accepted.
- p. Include in the contract a provision for computer software and hardware in all equipment, components and systems to be compliant with year 2000 (Y2K), and that the complete systems be tested prior to acceptance by the owner.

7. Handicapped

- a. Access provisions: doors, ramps elevators, toilets, phones, drinking fountains, emergency exits, lights, alarms, etc.

8. Equipment

- a. Food service: layout and details.
- b. Laboratories.
- c. Include in the contract a provision for computer software and hardware in all equipment, components and systems to be compliant with year 2000 (Y2K), and that the complete systems be tested prior to acceptance by the owner.
- d. The equipment, components and systems includes but is not limited to, programmable thermostats, HVAC controllers, auxiliary elevators controllers, utility monitoring and control systems, fire detection and suppression systems, alarms, security systems and any other facilities control systems utilizing microchip, minicomputer, or programmable logic controllers.

9. Code

- a. Refer to schematic design submittal and update if required.
- b. Update the "Building Information Form" on drawings.
- c. At the request of the DPW Code Reviewer, a letter from the local fire chief must be submitted to confirm the open perimeter accessibility of the building and location of fire hydrants.

2.5.3 Cont.

10. Telecommunications

- a. Indicate source of telephone service on site plan. Also location and size of BMDF / IDF rooms on floor plans. See Utility Information. Coordinate with architectural B,1,o.
- b. Indicate location of voice and data outlets on floor plans. Coordinate locations with agency representative.
- c. Show proposed method of horizontal and vertical raceway and cable distribution for voice and data communications systems. Provide one line riser diagram of voice and data distribution systems.
- d. Identify needs for power, HVAC, emergency standby or UPS systems, for computer rooms, BMDF and IDF Rooms.
- e. See Building Component, Division 16, Section 16750, Voice and Data Raceway Distribution.
- f. Renovation work: verify conditions in field. Provide wiring and terminations only if part of the scope of work.

2.5.4 CONSTRUCTION DOCUMENT PHASE

2.5.4.1. CONTRACT DOCUMENTS CHECKLIST - 100% Complete

Include all items from the schematic design and design development checklists in addition to the items as follows:

1. General

- a. Specifications shall be fully developed and complete. Sections shall conform to five digits, three parts, CSI format and all cross-references sufficiently coordinated in the specification. Refer to Special Unit Prices and Sample Specification Section and CSI Format for Construction Specifications.
- b. The final submittal shall include accepted responses to all previous design and reviews comments.
- c. All sources of all information shall be indicated on the drawings.
- d. Subjective evaluation terms shall not be used.
- e. Checklist for Permits and Approvals shall be updated and complete.
- f. Update application for above listed permits as required.
- g. The environmental document shall be reviewed to ensure that all agreed mitigation measures have been incorporated in the drawings and specifications.
- h. Include "Redicheck" or equivalent with submittal of the completed documents.

2. Architectural

- a. All items listed under design development checklist.
- b. Title sheet. Refer to Consultants Procedure Manual.
- c. Drawings: Floor plans, roof plans, elevations, sections shall not be less than 1/8":1'-0" scale, large details as needed to understand intent of the design; fully dimensioned; all material identified. Include legends and abbreviations.
- d. Key plan on each drawing for large projects.
- e. Detailed expansion and control joints.
- f. Elevations of all exterior surfaces including finish grades.
- g. Provide as many sections as needed to show all wall conditions; typical construction; elevators; stairs; wall treatments; flashing; intersections of different materials; insulation(s); wall reinforcement; footing and foundation details.
- h. Provide large-scale details sections to illustrate interrelationship of elements not shown in sections.
- i. Demolition (if any).
- j. Roofing data and details.
- k. Certification the design is in substantial compliance with the Connecticut Basic Building Code.
- l. Final coordination of the telecommunication system with DPW-Telecommunications Unit, agency and OIT.
- m. Anchorage details and spacing requirements for structures and nonstructural components due to seismic loads.

2.5.4 Cont.

3. Civil

- a. Contract limit lines, property line, north arrow.
- b. New and existing grades.
- c. Bench mark, base lines.
- d. Name of surveyor and date of survey.
- e. Survey: statement of accuracy.
- f. Linework shall clearly differentiate between existing and proposed work.
- g. Landscape, details, site furnishings, topsoil, fills.
- h. Roads and parking lots including drainage, radius, details, walks, stairs etc.
- i. Site lighting.
- j. Utilities. See Utility Hookups.
- k. Include subsurface investigation information on the drawings.
- l. Septic system.
- m. Details shall comply with "Connecticut Department of Transportation, Bureau of Highways, Standard Details, which shall be modified for Department of Public Works lump sum bid requirements by elimination of conditional requirements.
- n. The designer is to determine project conditions and shall eliminate all conditional, subjective or interpretive requirements within the project documents by either deletion or replacement with specific, definitive and/or measurable requirements.

4. Structural

- a. Foundation plan (plans, sections, footings, special ties, piles, etc.) including slab bases, footing drains and under-drains, retaining walls and site work walls and stairs foundations.
- b. Floor and roof plans and details.
- c. Framing details.
- d. Columns and reinforcement schedules.
- e. Design Loads for walls, floors, roof, wind, seismic, etc.
- f. Fireproofing.
- g. Elevations of footings (based on site survey datum), walls, top of steel, finished floor.
- h. Caissons. The bottom elevation of each caisson is to be indicated on the drawings. Piles. The estimated length for each group/cluster.
- i. Anchor details and spacing requirements for structures and nonstructural components due to seismic loads.

5. Mechanical

- a. Plans, details and flow diagrams. All pipe and ductwork sized.
- b. Indicate air inlet/outlet devices, neck size, velocity (CFM) and type.
- c. Show details and locations for all seismic sway bracing, expansion compensation, anchors and guides.
- d. Completed schedules, legends and general notes.
- e. Large scale plans of boiler, equipment, and main toilet rooms, food service areas, laboratories, and similar type areas.
- f. Provide riser diagrams for plumbing, fire protection, multistory duct and pipe.
- g. Final specifications with all equipment sections and temperature control sequence of operation.
- h. Include in the contract a provision for computer software and hardware in all equipment, components and systems to be compliant with year 2000 (Y2K), and that the complete systems be tested prior to acceptance by the owner.

2.5.4 Cont.

6. Electrical

- a. Complete site distribution drawings, including electric, telephone/Data, CATV, CCTV, fire alarm, security and lighting systems. Detail underground duct-banks, manholes, luminaire posts. Verify on-site conditions. Coordinate design with other utilities.
- b. Complete one-line power diagram, or power riser diagram. Indicate all major power equipment, transformers, panelboards, motor control centers, etc., with conduit and conductor sizes. Identify distribution voltages. Complete primary and secondary system details.
- c. Complete all lighting and power floor plans. Indicate all fixture designations, circuit numbers, receptacles, voice/data outlets, motors and temperature control equipment.
- d. Indicate electrical switchgear, panelboards, transformers and major equipment on the floor plans. Verify clearances are as required by all codes.
- e. Detail emergency and life safety systems, and/or other special or unique systems with details of components and methods of installation.
- f. Indicate all system outlets on floor plans and on riser diagrams for fire alarm, CATV, CCTV, paging, security, computer, voice and data systems, complete with conduit and conductor sizes where applicable.
- g. Complete all schedules and riser diagrams.
- h. Complete final specifications. Do not include "size as required", "to be determined at installation" etc., either on drawings or in specifications.
- i. Anchorage details and spacing requirements for structures and non-structural components due to seismic loads.
- j. Telecommunications requirements. Refer to C.10.
- k. Include in the contract a provision for computer software and hardware in all equipment, components and systems to be compliant with year 2000 (Y2K), and that the complete systems be tested prior to acceptance by the owner.

7. Equipment.

- a. Equipment layouts etc. Same as basic stage but with more detail.
- b. Include in the contract a provision for computer software and hardware in all equipment, components and systems to be compliant with year 2000 (Y2K), and that the complete systems be tested prior to acceptance by the owner.
- c. The equipment, components and systems includes but is not limited to, programmable thermostats, HVAC controllers, auxiliary elevators controllers, utility monitoring and control systems, fire detection and suppression systems, alarms, security systems and any other facilities control systems utilizing microchip, minicomputer, or programmable logic controllers.

8. Cost Estimate

- a. Prepare detailed cost estimate. Indicate quantities, unit prices, labor and material costs. Estimates shall be based on accurate quantity take-off and current unit prices.

9. Code

- a. Refer to schematic design submittal. Update design, if required.
- b. Update the "Building Information Form" on drawings.
- c. Fire-resistant ratings of structure elements and locations of penetrations for electrical, mechanical, plumbing and etc. to be shown.
- d. Fire protection systems plans and specifications must conform to NFPA 13 and 14; BOCA 1001.0, 1012.0, 1013.0, 1014.0 and 1015.0. Refer also to "Fire Protection Sprinkler System", Consultants Manual.

2.5.4. Cont.

- e. Fire alarm tests for all non-threshold buildings shall conform to DPW-Codes ref. entitled "DPW Acceptance Testing Procedures" prepared by DPW.

Telecommunications

- a. Provide correspondence from telephone utility company outlining method of service and charges if any. See "Utility Information".
- b. Final voice and data raceway for cable distribution systems, including outlet locations and conduit sizes.
- c. Final design of telecommunications rooms, and computer room(s) per wiring standard. Agency and DPW-Telecommunications Unit requirements.
- d. Complete conduit riser diagram for voice/data systems, including all required sleeves.

2.5.4.2 Tracings & Masters - Bid Documents (100% Complete)

Upon completion and approval of the Contract Documents, the Architect/Engineer shall submit (a) drawings of reproducible tracings on Mylar and (b) the specifications, printed one side on 8 1/2" x 11", 20 pound white bond paper with letter-quality print. Also provide CAD file in the storage medium required by DPW.

The Architect/Engineer and consulting engineers shall seal the drawings and specifications for which they are responsible with their individual professional stamps and signatures; this is mandatory. If the A/E firm is a corporation, also place the corporate seal on the drawings and specifications with the signature of the corporate officer authorized to so sign; this is discretionary. Refer to Sample Cover Sheet, Sample Title Block and Specification Title Page.

The contract documents will receive "sign-off" approval by DPW and the user agency if they are satisfied the design fulfill all the requirements. Sign-off by a DPW reviewer only indicates the documents are a reasonable representation of the design solution that is consistent with the original authorization, and reflect intent as developed by the client agency and DPW. The sign-off does not indicate any technical review and approval of the documents.

2.5.4.3 As-Builts (Record Documents)

The contractor shall "mark-up" a set of prints to show as-built conditions and deliver the set to the DPW-Construction Administrator (DPW-CA). The DPW-CA will transmit the marked-up prints to the Architect/Engineer. The A/E will then update the original Mylar drawings to show the actual as built conditions as noted by the contractor. The A/E will deliver the updated as-built Mylar to the DPW-CA for review and, if considered an accurate record of the site and building conditions forward the Mylar to the DPW-Team Member. Once the Mylar and CAD disks, including all the addenda, modifications etc., are received by the DPW-Team Member final payment for the construction administration phase may be authorized. Refer also to the General Requirements in the General Conditions of the Contract.

2.5.5. BIDDING

2.5.5.1. Fee for Plans and Specifications

A non-refundable fee is required on all Department of Public Works Construction/Renovation Projects for all plans and specifications. The required fee must be received by the Bidding and Contract Department before distributing the bid package. This pertains to both formal and informal projects. The fee will be based on actual cost incurred for all plans and specifications for that specific job. The fee to be charged will be included in the invitation to bid.

2.5.5.2. Project Manual

The project manual shall include a list of the contract documents such as Instructions to Bidders and Construction Specifications Bidding Requirements, Contract Forms, and Conditions of the Contract (Div. 0) and the Technical Specifications (Div. 1 through 16).

General Conditions of the Contract for Construction (Division 0)

Refer to the appendices for a copy of the "General Conditions of the Contract for Construction, Department of Public Works – State of Connecticut".

General Requirements (Division 1)

Refer to the appendices for a copy of the "General Conditions of the Contract for Construction, Department of Public Works – State of Connecticut".

A typical list of items included in the table of contents is as follows:

Table of Contents

Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract

00010	Invitation to Bidders
00020	Bid Proposal Form
00024	Standard Bid Bond Form
00025	Special Unit Prices (Optional)
00030	General Contractors Bidders Qualification Statement
00035	Subcontractors Bidders Qualification Statement
00045	Objective Criteria For Evaluation Qualifications of Bidders
00050	Subcontract Agreement Form
00100	Notice to Bidders (Refer to Appendix W)
00200	Prevailing Wage Rates/Contractors Set-Aside
00300	Certificate of Insurance
00400	Set-aside Contractor Schedule
00500	Contract
00600	Commission of HR and Opp./Contract Compliance Regs.
00650	Executive Order #16 – Workplace Violence
00700	General Conditions of the Contract
00800	Supplementary General Conditions (Optional)
00900	Amendments

2.5.5.2 Cont.

Technical Specifications and Drawings

Table of Contents

Division 0 - Bidding Requirements, see above

Technical Specifications (Division 1 through 16)

Division 1 - General Requirements

- 01019 Contract Considerations
- 01027 Application for Payment
- 01030 Supplemental Bids
- 01035 Modification Procedures
- 01040 Coordination
- 01045 Cutting and Patching
- 01010 Summary of Work
- 01050 Field Engineering
- 01090 Reference Standards and Definitions
- 01100 Alteration Project Procedure
- 01200 Project Meetings
- 01300 Submittals
- 01310 Construction Schedule
- 01315 CPM Schedule
- 01380 Construction Photographs
- 01400 Quality Control
- 01500 Construction Facilities and Temporary Controls
- 01600 Materials and Equipment
- 01631 Equals and Substitutions
- 01650 Starting of Systems
- 01700 Contract Closeout
- 01730 Operations and Maintenance Data
- 01740 Warranties and Bonds

Division 2 - Sitework

Division 3 - Concrete

Division 4 - Masonry

Division 5 - Metals

Division 6 - Woods and Plastics

Division 7 - Thermal and Moisture Protection

Division 8 - Doors and Windows

Division 9 - Finishes

Division 10 - Specialties

Division 11 - Equipment

Division 12 - Furnishings

Division 13 - Special Construction

Division 14 - Conveying Systems

Division 15 - Mechanical

Division 16 - Electrical

List of Drawings (Number and Title)

Drawings

A full set of Construction Drawings i.e., Site, Structural, Architectural, Mechanical, Electrical, Plumbing Equipment etc., shall be included in the bid package.

2.5.5.2. Cont.
ADDENDUM

Changes to the Bidding and Contract Documents.

[PROJECT TITLE] [LOCATION] [PROJECT NUMBER]		
BID OPENING	[TIME]	[DATE]
ADDENDUM NUMBER []		[DATE]
The following clarifications are applicable to Drawings and Specifications for the referenced project,		
<u>Item 1</u>		
<u>Item 2</u>		
<u>Item 3</u>		
<u>Item 4</u>		
End of Addendum []		
<hr/> Chief Financial Officer Department of Public Works		
Page 1 of 1		

Notes:

1. Indicate the full title of the project and project number.
2. Indicate the current date and time of bid opening. If changed, not in item #1 of the addendum.
3. Label all pages and drawings "Addendum # []",
4. At the bottom of each page indicate the page number and number of pages,
5. The last page of the addendum shall be signed by an authorized DPW person.

2.5.5.2 Cont.

d. Technical Specifications and Drawings

Table of Contents

Division 0 - Bidding Requirements, see above

Technical Specifications (Division 1 through 16)

Division 1 - General Requirements

- 01010 Summary of Work
- 01019 Contract Considerations
- 01027 Application for Payment
- 01030 Supplemental Bids
- 01035 Modification Procedures
- 01040 Coordination
- 01045 Cutting and Patching
- 01050 Field Engineering
- 01090 Reference Standards and Definitions
- 01100 Alteration Project Procedure
- 01200 Project Meetings
- 01300 Submittals
- 01310 Construction Schedule
- 01315 CPM Schedule
- 01380 Construction Photographs
- 01400 Quality Control
- 01500 Construction Facilities and Temporary Controls
- 01600 Materials and Equipment
- 01631 Equals and Substitutions
- 01650 Starting of Systems
- 01700 Contract Closeout
- 01730 Operations and Maintenance Data
- 01740 Warranties and Bonds

Division 2 - Sitework

Division 3 - Concrete

Division 4 - Masonry

Division 5 - Metals

Division 6 - Woods and Plastics

Division 7 - Thermal and Moisture Protection

Division 8 - Doors and Windows

Division 9 - Finishes

Division 10 - Specialties

Division 11 - Equipment